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Transformation and Catch-up Issues in Hungary, Examined in Network Alignment Terms

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SUMMARY

Since the early 1990s there was increasing academic awareness about the growing role of networks (*i.e.* interconnected companies, associated institutions and other stakeholders) in economic activity. The majority of the literature is concerned with the *advantages* of network-based cooperation: lower transaction costs; increased flexibility; better alignment of distributed capabilities and exploitation of complementary expertise in an era of ever-increasing specialization; enhanced knowledge flows and learning potential and an accumulation of social capital, *etc.*, and as a result, improved performance and increased competitiveness. Network ties and network embeddedness are thus considered as strategic resource, while analyses of the other side of the coin, *i.e.* network failure and inferior-to-expectations outcomes remain scarce.

The conceptual recognition that network formation and network integration is no panacea, *i.e.* similarly to the much-researched and analyzed phenomena of market failure or government (state) failure, there is such thing as *network failure*, is still missing. The first attempt to create an overarching theory on causes of network failure in a catching-up context, (when network structures and network collaboration fail to achieve their developmental objectives) was made by von Tunzelmann. Tunzelmann introduced the network (mis)alignment perspective into the analysis of catching-up.

This paper analyzes examples of network misalignment in Hungary to demonstrate the applicability of this theoretical perspective to analyses of CEE's transformation and catching-up performance. We investigate 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.

We conclude that 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.

Among the main policy implications we stress that 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).

INTRODUCTION AND OVERVIEW*

The early years of transition were marked by disruption of almost all economic, political, social and institutional linkages in the Central and East European (CEE) transforming economies. Disorganization in production, innovation and market linkages was accompanied by state desertion (Ábel and Bonin 1993; Csaba 2005) and disorganization of institutions. Broadly, the collapse of the command economy can be called overall disorganization of governance, and the transformation to a market economy, modernization, and integration into the global patterns of production in general and EU ones in particular as reorganizing or creating networks at the micro, meso and macro levels, incorporating actors from these countries into a multitude of supranational networks.

But contrary to a covert assumption of benchmark-based approaches, re-establishing the missing links and creating new ones (network formation and integration) cannot as such guarantee modernization or catch-up, or cannot guarantee upgrading beyond an initial push.[1]

This is apparent in significant differences between countries in the upgrading performance and prospects of their economic actors. One telling recent example of heterogeneous outcomes of network integration is given by Evgeniev (2008), who compared the adjustment experience of Bulgarian and Turkish textile and garment firms. Though both integrated their operations with leading international firms and learned from them, and both benefited from their international partners' technology and know-how transfers, Bulgaria's low-cost producers rapidly became locked in dependent relationships that impeded efforts to upgrade beyond a certain level, while the Turkish firms managed to upgrade their operations and strengthen their autonomous position in world markets.

This paper adds to the cumulative evidence for the applicability and usefulness of a network alignment approach to assessing CEE transformation and catching-up performance. Cases of network failure and network misalignment within the innovation system and within producer networks are examined by combining theoretical arguments with Hungarian fieldwork experience originating from the author's past investigations and from an overview of the literature (*i.e.* secondary source evidence). A third focus in the paper is institutional and policy alignment—how institutional set-up facilitates or works against achieving development goals in Hungary.

One research finding has been that although all new EU members abound in examples of network misalignment, Hungary's is the most telling case, as its specific socialist legacy has had a lasting impact on social actors' behaviour, norms and values (Győrffy 2007). Distorted social, institutional, economic and legal development after the change of system (Sajó 2008)—make misalignment a ubiquitous phenomenon.

Section 1 recapitulates the overall disorganization in the early years of transformation and describes the policy makers' short-sighted vision of "choosing between state and market."

Section 2 looks at the CEE economies' newly formulating networks in the second

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[1] On the "initial push" effect of foreign investment, see Szalavetz 2000.

phase of transformation, with the newly emerging production, innovation and institutional networks.

Section 3 investigates in several dimensions some cases of network misalignment: missing network elements, misalignment in various types of networks, and policy misalignment issues. Networks are dynamic entities of changing internal structure and efficiency. These multiple interactions are analysed from a dynamic point of view.

The point of departure is a paraphrase of the thesis on institutions formulated by Paldam and Grundlach (2008): While networks have an impact on development outcomes, network effectiveness—the development role and value of network ties—is continually shaped by the capabilities and behaviour of network actors.[2] Networks offer opportunities but concurrently impose constraints that are hard to overcome. It is depends on the capabilities of individual network members whether or to what extent they exploit network opportunities and manage to influence their position within the network. At the same time, various exogenous factors have an impact on network structure and efficiency. Likewise, exogenous factors such as the business cycle, technological change, policy actions, regulation and so on may constrain or improve the networks' performance-enhancing effects.

Section 4 reaches conclusions and examines the policy implications of the findings.

[2] According to Paldam and Grundlach 2008, 66–7, institutions are not just *chosen* (by policy-makers), but steadily shaped by aspects of parent-country development, though they also impact on development outcomes.

1) TRANSFORMATION AND DISORGANIZATION OF MARKET AND NON-MARKET LINKAGES

The thesis that disorganization was one of the prime causes of output decline in the period of transformation recession was advanced by Blanchard (Blanchard 1997; Blanchard and Kremer 1997) and mentioned by Kornai 1994 (178–80) as "disruption in coordination". Accordingly, transformation brought about the disruption of existing relations. There was a shorter or longer period of institutional void, in which bureaucratic coordination was no longer in place personal (social) ties no longer worked, but the new market connections and market coordination institutions were not yet established either. This seriously impeded economic activity and caused a dramatic decline in output.

Disorganization, coupled with uncertainty about property relations, rules of law, *etc.* was manifest in producer/supplier relations and in all economic activity-related relations (broadly speaking in all channels through which resources were acquired: distribution channels, information channels, *etc.*) and in political and social ones (public services were especially hard hit).

Nonetheless, this disorganization, experienced as chaos, economic turmoil and sharply increasing transaction costs by actors in that period, was a prior condition for eliminating allocation distortions and escaping the lock-in effects of the failed system. Examples of the latter include a monopoly/monopsony phenomenon detailed by Blanchard and Kremer (1997): most producers could rely only on a single supplier

when trying to purchase key production inputs, while 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] There were similar lock-in effects on an international level through intra-COMECON trade (Winiecki 2002).

Luckily the disruptive changes that swept away socialist-type of linkages coincided with the emergence of new, networked production models in the world economy. This, with the transforming economies' policy efforts to liberalize and privatize, helped to establish new linkages and integrate surviving and newly emerging economic actors into global production networks. Such integration was joined by rearrangement—or recombination/reconfiguration as Stark (1996) put it—of existing institutional, social and inter-firm ties: a mix of continuity and change!

But the formation of new, multifunctional and multidimensional networks, along with local firms' spectacular upgrading results and rapid expansion of output through industrial integration, disguised the fact that realignment in networks other than production (*e.g.* science and technology) was lagging behind and various forms of network misalignment were occurring. These—surveyed in detail in Section 3—were brought about by mistaken, ideologically-driven policy choices.

One of the main mistakes of Hungarian policy-makers was a lopsided perception of the state's role in transition. Modernization and integration into market-oriented networks were attempted and driven ahead by decisions made in terms of "choosing between state and market", in favour of the latter. Various cases of network misalignment occurred because of an excessive, ideologically driven emphasis on state withdrawal (Kádár 2008). Strategic issues were narrowed down to the simple question of "choosing between state and market"[4] while more complex modes of governance were ignored and the state's regulatory and planning functions neglected.

An example of ambiguous outcomes of state withdrawal is provided by the rapid and spectacular transformation of the property structure. Privatization facilitated the upgrading of actors and their integration into global production networks, especially in the Hungarian model, with its comprehensive involvement of foreign capital in the privatization process. But privatization without the formulation and enforcement of competition law led to perverse outcomes, for instance to monopoly power for large international food processing companies following the privatization of the sugar and vegetable oil industries (see von Tunzelmann and Yoruk 2004 on concentration ratios in CEE food processing industries).

Before embarking in Section 3 on cases of network misalignment, let us review the network formation and network realignment that followed the disorganization of static socialist-type networks.

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

[4] This is partly understandable. After 40 years of state intervention in every economic issue and many social ones, there was a full consensus among the intelligentsia on the need to eliminate the state-led development of the command economy. This led to a deep-rooted conviction among analysts that *the state is an incapable actor* that does more harm than good when it tries to influence and regulate economic processes.

2) NETWORK REALIGNMENT IN TRANSFORMING ECONOMIES

Network realignment was at its most rapid and spectacular in local manufacturing companies privatized to foreign investors with an efficiency-seeking motivation. Investors integrated their new local subsidiaries into their global production networks, transferred the embodied and disembodied technology needed, and thereby improved local production capabilities. At the same time, this type of network integration ensured markets for local producers' products, which facilitated trade reorientation and substituted working capital for the constraints of bank credit. This short, incomplete summary of foreign investor transfers shows that integration in global production networks was multi-dimensional, in the 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 integration of local actors into the global production networks of new foreign owners exacerbated the disruption of old networks, *e.g.* former local and intra-COMECON supply linkages. Some of these linkages broke "spontaneously" with the dissolution of COMECON markets and the flood of bankruptcies and liquidations leading to the market exit of thousands of firms (Szanyi 2002). Some of the existing supply linkages, however, were broken by the investors, who replaced them with suppliers from their own production networks, as local suppliers did not meet, or were not expected to meet their quality expectations (Sass and Szanyi 2004).

Another type of disruption by foreign investors that contributed to later misalignment was de-verticalization of local subsidiary production, *i.e.* separation of corporate functions. Local subsidiaries became monofunctional production entities, as their other production-related functions—purchasing, marketing and sales, design, product and process R&D, and various production-related internal services (HR, technical maintenance, after sales services, *etc.*). De-verticalization involved closing down in-house industrial research laboratories and other functional departments.

With domestic firms, network integration and network realignment proved far slower than with firms privatized to foreign investors, mainly due to market and financing difficulties. These hindered them in benefiting from the services of surviving research institutions, while difficulties in market acquisition forced many into dependent networks (outward processing) that stopped them accumulating sufficient capital to upgrade their operations.

The formation of new industrial networks was preceded and accompanied by rapid institution building. Support institutions focusing on economic development, designed to create the needed central and regional institutions of a market economy, were set up along with various new institutions for a national innovation system. Increasing institutional density and burgeoning policy programmes were expected to increase the network embeddedness of local actors, improve their network position, enhance the complexity (or depth) of network cooperation, or more broadly improve network efficiency. Some of these aims were met— the creation of a National Office of Research and Technology and a multitude of other

new institutions, including cooperation research centres, science parks, technology incubators, as well as an array of policy programmes aimed at increasing the weight of industrially relevant applied research, and enhancing collaboration between industry and academia collaboration. Although these improved Hungary's performance in this respect, various forms of network misalignment slowed or even reversed the improvement process. The next section investigates such cases and consequences.

3) Cases and consequences of network misalignment in Hungary

The literature on network misalignment (von Tunzelmann 2004 and 2007) identifies network failures of various types. At the system level, there is network failure if the network required to promote developmental goals does not exist. Network failure may also arise in cases where the network has too few or too many elements (members). Another type of systemic network failure is if the network, while existing, is anti-developmental. Recent examples in Hungary of the last type of failure include rent-seeking, which is widespread in developmental policy programmes. The hyper-political behaviour of some public authorities led to the emergence of parallel business networks in various industries. Parallel networks were strongly tied to single political parties (Kapitány Szabó 2002 and Sajó 2008), which reduced competition for public procurement tenders.[5]

[5] Another widespread solution is to secure business advantages by financing each political party in a predetermined percentage according to their seats in Parliament. Few of the cases become public, but there are some examples (two recent ones include the Strabag case as summarized in www.realdeal.hu: "Austrian weekly publishes new details in alleged Strabag corruption case," September 9, 2008 or the Siemens bribery cited by the *Budapest Times* on August 6, 2008: Wheels likely greased: Siemens boss admits bribery scandal likely to extend to BKV. See also the analysis in Török at al. 2007, which reveals that apart from bribery and collusion making public procurement procedures unfair, the law is often broken through incompetence. Other obstacles to efficient spending of public money are systemic failure and inflexibility of regulation: "With a view to avoiding corruption, legislators have created such a rigorous system that it has an adverse effect on efficiency and, in many cases, on the professionally reasonable selection" Török *et al.* 2007, 18.

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 are absent or too rudimentary, or perform too poorly

Two phenomena can be mentioned as outstanding examples of rudimentary networks or of absent or poorly performing nodes within the network. The first is the poor performance of institutions engaged in innovation diffusion and commercialization of new technologies. The second is underdeveloped venture capital industry. Both deficiencies have similar consequences: the performance of a key element in the national innovation system, or a key node in the network being inferior in performance to other network elements (nodes).

With innovation diffusion, Hungary exhibits a sufficiently dense network of institutions engaged in diffusing and commercializing technology, but its efficiency is minimal—a typical teething problem in transforming economies. Several such institutions were created for specific purposes—commercialization of the fruits of a particular S&T policy programme. These are left high and dry if the programme has few results or falls victim to a change of government (Viszt 2005; Török 2006). Many of them also face serious problems with highly unpredictable funding. There are dozens of technology transfer offices at universities, but with a few exceptions (at Budapest University of Technology and Economics, and to a lesser extent at Debrecen and Miskolc universities), they suffer from weakness in their network capabilities, *i.e.* their performance in developing industry/university contacts and contract research assignments.[6] Instead they are preoccupied with monitoring calls for publicly funded research project proposals and assisting university staff in the administrative tasks involved in these (OECD 2000a, 130).

The main problem with venture capital placement in Hungary (and in several other CEE economies) is not with the amount of such investment, low though it is compared with the EU15 average,[7] but with the destination, as most is devoted to buying out existing high-performing firms. So the investments fail to mitigate the funding difficulties for high-growth, new-technology-based start-ups, so preventing them from giving an innovation-driven growth boost to the economy.[8] From a network misalignment perspective this means there are no linkages, or insufficient ones, between the national system of innovation and the national system of funding.

3.2. Too many network elements

One recurring statement in the summary of the results of the OECD MONIT project[9] (OECD 2005) is that the structure of innovation governance in several member-countries is fragmented, causing a loss of strategic capacity (p. 65). This is a common challenge for most member-countries and especially relevant to Hungary, where S&T policy-making is functionally compartmentalized (not interconnected) and hierarchically managed.

The systemic nature (pervasiveness) of innovation policy—the fact that it is interconnected with many economic and social sub-systems and policy areas (regional policy, education, promotion of entrepreneurship, competition policy, *etc.*) has led to rapid multiplication of policy organizations and specialized institutions with overlapping tasks, and unpredictable and unac-

[6] The poor performance of technology transfer offices can also be explained by the very slack market for technology in Hungary. Every year, Pro Inno Europe's *Trendchart* reports as one of the main challenges for innovation policy in Hungary the very low proportion of innovative firms.

[7] Figure 1.9 in OECD 2008a (Venture capital investment as a percentage of GDP, 77) compares the performance of front-runners (Denmark and 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 to a lack of promising, viable business plans.

[8] The total amount of venture capital invested in 2006 was €535 million, a large amount even by European standards. But one deal amounted to €500 million and the top four deals to €521 million. The data for 2007 tell a similar tale: 12 deals amounting to €365 million, of which the top deal came to €327 million and the top four to €358 million, so that only €7 million was left in principle for seed funding of young, fast-growing technology-based companies (Karsai 2008).

[9] Monitoring and Implementing National Innovation Policies

countable funding policies. The opacity of the system is further increased by recurrent streamlining efforts and frequent changes in the status, mandates and funding of S&T institutions.

Apart from this "diversified" institutional landscape, there is an excessive number of policy measures and funding schemes aimed at promoting the main S&T objectives—almost 40. Many are overlapping, which increases the fragmentation of the system (OECD 2008a, 168–73). Furthermore, there are conceptual differences about the role of innovation policy and the strategic goals policy to achieve, as well as bitter rivalry between the two main S&T-policy institutions: the Hungarian Academy of Sciences and the National Office for Research and Technology (NKTH). This causes damage by hindering the development of a coherent vision of the role of research and innovation and of ways to promote this (Török 2006).

To sum up, the governance of innovation in Hungary exemplifies well the network misalignment caused by an unnecessarily diversified network. This has led to reduced transparency of the system and prevented policy-makers from attaining a critical mass of research activity in specific fields.

3.3 Network misalignment

Two prime examples can be mentioned of network misalignment (existing and pro-developmental networks that fail to achieve stated developmental objectives). One—the Hungarian education system—has been widely documented and analysed. Less well known internationally is the other—due to fragmentation of Hungarian public administration.[10]

The misalignment problems in Hungarian tertiary education originate from policy emphasis in the mid-1990s on the need to increase the human capital stock. This prompted rapid expansion of existing educational institutions, with doubling, tripling and in some cases quadrupling of the number of admissions. At the same time, new tertiary establishments mushroomed, producing a supply shock on the labour market. This sharp increase in the supply of graduates (Szalavetz 2008 and references there) did not contribute to the aim of catching-up and improving the position of the economy and its actors in an era of technology-based competition. The result was devaluation of certain academic qualifications. The increasing gap between the quantity and the quality of human resources thwarted Hungary's efforts towards a human-capital type of push for modernization such as Ireland had obtained (Kádár 2008). Nor could Hungary achieve a rapid improvement in its position in certain science-related or human capital-intensive fields, as China had done in nanotechnology and India in the software industry. Instead, there appeared extreme imbalances on the labour market. Shortages of specific skills and inadequate supplies of technicians have kept building up for five years, while the number of holders of superfluous degrees has increased to intolerable levels.

The worsening problems with labour supply have increasingly constrained the efforts to modernize economic policy and improve competitiveness. This misalignment was caused partly[11] by the reluctance of

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

[11] The worsening imbalances, including student and parental disregard for signals from the labour market, can also be put down to cultural factors.

policy-makers to intervene, set quantitative targets for specific skills,[12] or visualize an optimal skill structure. Instead, educational institutions are financed according to admissions, which gave them no incentive to consider the needs of employers on the labour market.

Similar misalignment occurs in specific educational segments. Public and private expenditure on medical education is high in Hungary and the number of those qualifying in medicine and nursing is high: 896 and 1098 respectively in 2008,[13] but the nursing shortage and regional shortages of doctors keep worsening. In 2008, 728 doctors and 153 nurses chose to work abroad, mainly due to poor pay and working conditions at home.

Network misalignment due to an ill-conceived structure of Hungarian public administration has become manifest, for instance, in anomalies related to public construction works (highways, metro lines, bridges, *etc.*) Hungary has three tiers of elected government: central, county and local. The number of municipalities is almost 3200, each with an administrative staff of 5–300, depending on settlement size. Budapest has 23 autonomous districts or boroughs, each one with its own mayor and each issuing decrees within its own competence. This fragmented structure partly explains the excessive length and lack of transparency of permission procedures for public works. Entrepreneurs have to agree individually with a great number of autonomous local government authorities, at great burden and cost. Each authority along the road or line can block the project for an unrestricted period, and usually ask for additional construction work in return for their permit,[14] including alternative routes, junctions, maintenance works, resurfacing of existing roads, *etc.* The costs of additional construction works carried out to obtain such construction permits may amount to 10–15 per cent of the original project cost (Kapitány Szabó 2008).

Two examples: The opening of Megyeri Bridge (an important section of the M0 motorway ring round Budapest, built to reduce transit traffic in the city) suffered nine months' delay as surrounding villages refused to issue necessary permits for the bridge to open, on the grounds that promised additional work (a small local bridge) had not been done. Finally the bridge received a temporary permit from the National Transport Authority.

Another example is the 1872-metre Kőröshegy viaduct 90 metres over a valley, opened in 2007 as part of a 15-km extension of the M7 motorway near Lake Balaton. The cost was HUF 42 billion, while that of a technically feasible alternative would have been HUF 3 billion. The viaduct was built because that was the only route out of 47 alternatives (prepared over a period of 17 years) that the local municipalities of Kőröshegy (1800 inhabitants) and Balatonföldvár (2300 inhabitants) would support. In its 2008 report, the State Audit Office of Hungary declared that the viaduct could not be justified by technical or geographical means and so public money had been spent inefficiently (Állami Számvevőszék 2008, 17).

Some elements of the companies' higher-than-average operational costs in Hungary (energy, telecommunications and internet,

[12] The percentage of students graduating in science was 4 per cent in Hungary in 2004, as compared with an OECD average of 10 per cent (Ireland: 23 per cent). *Education at a Glance, 2008.* Paris: OECD, 45.

[13] *Statistical Yearbook of Education 2007/2008.* Budapest: Ministry of Education and Culture, 2008

[14] In one case, a local government authority asked an entrepreneur to pay for renovating the heating in a nursery school (Kapitány Szabó 2008).

for instance) can also be explained by network misalignment. The current higher-than- average energy prices, for example, (at least for industrial consumers),[15] derive partly[16] from asymmetric opening of the energy market, partly from various mistakes[17] committed during the privatization of public utilities (Bakos 2001). To achieve the highest maximum budgetary revenue from privatization, the Hungarian Privatization and State Holding Company accepted that the energy price should provide a minimum of 8 per cent real return on investment for power distribution companies for five years (on assets accepted as necessary for the licensed activity—Lővei 2000, 69–70).

Similarly, policy-makers strove for successful privatization deals in the early 1990s and their exclusive focus on budgetary revenues made them grant eight years' exclusive rights to provide long-distance, international telephone services in Hungary and local call services in 29 (out of 54) dialling areas to the Hungarian telecommunication company Matáv's German–American investor in 1993. Slowly increasing competition in the first half of the 2000s[18] has failed to exert significant pressure on telecom prices, which explains, together with weak regulation, the outstanding profitability of Hungary's main telecommunication operator (Fülöp and Major 2004).[19] The other side of the coin is that companies' higher-than-average operating costs had an adverse impact on competitiveness (Török 2007) and delayed convergence of the internet penetration ratio in Hungary with the average for the advanced economies.

Several examples of the third type of misalignment can be detected in the national innovation system. The most conspicuous sign of network failure, despite a significant number of policy notions, is that promotion of innovation activities—in terms of innovation generation and collaboration—have shown meagre results. 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 fragmented support cannot alone explain this apparent failure. The key factor is ineffective policy coordination—the prevalence of ad hoc, stand-alone policy action and lack of coherent strategy.

4) Conclusions and policy implications

The paper has analysed examples of network misalignment in Hungary, to demonstrate the applicability of this theoretical perspective to analyses of transformation

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

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

[17] As frequently happened in a variety of industries, investors stipulated controlling rights in the privatization contract when only minority shares of companies were privatized, which in practice made them able to exercise majority control over the corporation acquired without paying the price for it. EDF of France, for example, secured for itself three out of a total of five seats on the board of directors although its share in the company was only 47.55 per cent (quoted by Bakos 2001).

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

[19] The ratio of gross profits to sales was 15–20 per cent in the second half of the 1990s. There was even a year when the ratio exceeded 30 per cent. It has declined very slowly in the 2000s (Fülöp and Major 2004).

and catch-up performance in the CEE economies.

The theory of network (mis)alignment is related both to Mises' concept on unintended consequences[20] (Mises 1929) and to Lachmann's theory on institutional coherence (Lachmann 1970).[21] Disorganization in the early transformation years broke away from the past of the transforming economy's agents and their more or less persistent behaviour patterns. The subsequent process of network realignment was a path-dependent, incremental learning-by-doing process. So the newly emerging structures failed to meet the dual requirements of *adaptation* and *coherence,* the latter principle being shunned. This misalignment has in turn jeopardized adaptation: the process threatens to turn into a vicious circle.

With policy implications, a distinction needs drawing between ones related to production networks and ones related to policy misalignment.

Accumulating case study evidence on the heterogeneity of the upgrading performance of transforming economies and companies has amply shown that network integration alone is not a panacea. Well-designed enabling policies are indispensable to making newly integrated actors capable of profiting from network opportunities and carrying out network-enabled upgrading.

Performance heterogeneity also underlines the importance of weak ties, as something to be promoted by all possible policy means. To sum up Granovetter 1973, the expression weak ties refers to two factors in the case of actors in transforming economies. One is the indispensability of *multiple* collaboration linkages, to avoid excessive dependence on and strength of a single contractor. The other is that economic actors need to establish both horizontal and vertical linkages. As Radosevic *et al.* 2008 said, value chain partners (buyers and suppliers) are the unique source of knowledge and unique determinants of growth for most CEE companies, apart from a few knowledge-based entrepreneurs. Few Hungarian SMEs have horizontal linkages with innovation system actors, and few are integrated in clusters or informal, social capital-increasing networks. Though horizontal linkages in most cases are "weaker" than value chain linkages, they are the ones to promote active technology diffusion and accumulation; vertical, value chain linkages contribute only to passive diffusion.

The implications of the policy misalignment cases detailed resemble in some ways the usual recommendations in policy papers

[20] According to Mises's thesis, government intervention in the economic system leads to various adverse and unintended consequences that trigger further, additional interventions. Hungarian experience provides telling examples of unintended consequences. Take the cases of public procurement. As is well-known, public procurement in the case of government contracts is necessary to boost competition among bidders, 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). So 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 will later produce huge losses for him. So the winner can either renege on the contract (and enterprises with negative references are not excluded from later tenders—Török *et al.* 2007.) Another solution is to use lower quality materials than contracted for when implementing the contract, or fabricate additional invoices for "unplanned" cost items (Csillag 2008). An additional, frequent unintended consequence of this systemic failure is that the main contractor fails to pay its suppliers. With the Megyer bridge, the total of subcontractors' unpaid invoices came to 5 per cent of the investment (Index 2009; Pelle 2009). According to estimates, the total amount of unpaid invoices in Hungary is between HUF 500–1000 billion. In the construction sector, 90 per cent of SMEs have problems with unpaid invoices (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.

(irrespective of their specific focus). A recurrent item in these that needs repeating is the necessity to improve accountability and more effective governance. Policy design and implementation must be based on a clear strategic vision, at least over the medium term of the aims to be achieved (priority setting) and the steps to be taken. This vision (strategic plan) will increase predictability and improve institutional stability, coherence and transparency.

A common explanatory factor for many of the unintended results is the depreciation of Hungary's social capital stock, which is strangely at odds with the country's rapid catch-up (Kádár 2008).[22]

As for recommendations specific to misalignment, governments should avoid the legislative (regulatory) illusion: the desire to introduce laws or decrees to cope with all possible problems, without performing impact analysis or considering coherence requirements. This only results in regulatory duplication, overlapping, and inefficiencies. Policy misalignment can also be reduced by enhancing collaboration across all levels of the administration and 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 under the Portuguese Simplex Program—OECD 2008b) would further both goals by eliminating specific misalignment phenomena and improving the culture and commitment of public administration.

Misalignment in the national innovation system can be reduced by focusing on aspects covered by a broad definition of it (Lundvall 1992), *e.g.* knowledge infrastructure, efficiency of transfer institutions, and most of all, private sector demand, instead of attending exclusively on R&D supply.[23]

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[22] It is worth recalling an early warning by Ralf Dahrendorf's, who argued that while constitutional transformation could be achieved in six months, tangible economic improvements would take six years, and it might take as much as sixty years for civic culture and society to evolve to a level that ensured the proper functioning of democracy

[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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