

RESEARCH ARTICLE

Catching up, forging ahead or falling behind? Central and Eastern European development in 1990–2005

Marek Tiits*, Rainer Kattel, Tarmo Kalvet, and Dorel Tamm

Institute of Baltic Studies, Tartu, Estonia

(Received 15 October 2007; final version received 2 November 2007)

This paper aims to assess the economic development and development policies in the Central and Eastern European (CEE) countries in 1990–2005, from the collapse of the USSR to the enlargement of the European Union. A great number of authors have generally seen the transition as a very positive process. They have concluded that the reform policies focusing on macroeconomic and price stability have been the key to success for CEE economies. A reliable economic environment is, of course, instrumental for longer-term economic success, as exemplified by the prolonged crisis in most of the former Soviet Union. Our analysis of the economic development and competitive advantages in the region, however, leads to the conclusion that the specific approach to transition that the Central and Eastern European countries followed came at a rather high cost. Comparative neglect and weakness of a set of policies crucial for longer-term development, such as science, technology and innovation policies, has led to deterioration in the last decade rather than the strengthening of the competitive advantages of Central and Eastern European economies. Furthermore, we argue that, in most cases, CEE countries have unfortunately overlooked or misjudged a number of development challenges, and have thus implemented policies that have generated growth at the cost of rapidly increasing risks. This is how the financial fragility of several Central and Eastern European countries has recently increased drastically, and the region seems to have virtually arrived at the brink of economic collapse. Since the CEE countries joined the European Union, the CEE governments have gradually moved towards acquiring a more active role in economic development. These policies need, however, to be strengthened considerably and reinforced by macroeconomic policies that curb current excessive dependence on foreign-financed growth.

Keywords: Central and Eastern Europe; industrial dynamics; innovation policy; financial fragility

Introduction

Economic development in the Central and Eastern European countries (CEE)¹ during the last decade is seen as a largely positive, if not very positive, process by both academic and policy circles. To use terms from Abramovitz's (1986) framework, CEE countries are seen not only to catch up, but possibly even to forge ahead. The

*Corresponding author. E-mail: marek@ibs.ee

economic difficulties of the early 1990s largely belong to the past, and several countries of the region have experienced even faster GDP growth rates than most of the developed nations in recent years, in the context of EU enlargement.

It appears however, as we demonstrate in the following section, that judgement on the success of transition in CEE strongly depends on the selection of the period under observation. Furthermore, we show that developments in CEE countries in the 1990s are marked by different, sometimes seemingly contradicting trends: rapid economic growth accompanied by deepening regional and social inequalities; large inflow of foreign direct investments (FDI) accompanied by financial fragility in terms of negative current account balance and extremely rapidly growing private and public debts; rapidly growing research and development (R&D) costs, albeit from a very low base, accompanied by the deterioration of economic structure.

This article sets out to explore why this is the case. We look at the changes in industrial dynamics in CEE countries during the 1990s, and juxtapose these with actual policy responses and actions to surpass or alleviate emerging problems. We argue that, in most cases, CEE countries have overlooked or misjudged certain economic and industrial challenges (changes) and thus responded with policies that could not ease the problems they were supposed to.

The following discussion is divided into four distinct sections. The first section encompasses a literature review on transition strategies and immediate crisis management in CEE. Then we analyse the impact of the transition crisis, following policy responses and the competitiveness² of CEE economies, seeking to assess the longer-term development prospects of the region. Finally, we highlight some of the signs of increasing financial fragility in CEE, and draw conclusions for the future.

Collapse of the USSR, transition crisis and stabilization in the 1990s

It is now almost two decades since the collapse of the “Soviet bloc”, but the answer to the question “why did socialism fail?” still remains largely debatable, except for some of the obvious aspects like low productivity growth and rigidities in the economic structure. Thus, from the current viewpoint, there was no single dominant economic reason for the failure, as various authors have identified problems in almost every aspect of economic development and governance.

Campos and Coricelli (2002) have demonstrated that the economic growth in Eastern Europe ran out of steam over a prolonged period of time, as the growth rates declined continuously from the 1960s onwards. The Soviet-style central planning system had an increasing number of incorporated rigidities, and the dominant expansive growth imperative favoured accumulation instead of “intensive growth”, which is achieved by means of technological and organizational change (Ofer 1987). Hence, the failure of the USSR was essentially an innovation policy failure, or as expressed in Carlota Pérez’s terms, an outcome of the inability to follow the techno-economic paradigm shift from the age of mass production to the age of information and communication technologies, the impellents of the latter being directly at odds with the very foundations of the Soviet system (see Freeman 1995, Pérez 2002).

The vast majority of CEE countries started implementing reform policies in the early 1990s, which emphasized the liberalization of markets, wage and price stability, containing public deficits, minimizing the tax burden, and strong market orientation in all socio-economic sectors.³ The transition strategies generally built on the

assumption that state ownership as such is always unwanted, since the private sector would in each and every case be capable of demonstrating productivity levels superior to those of the public sector. Rapidly handing over as much decision-making power as possible to the private sector therefore became the focal point of the reforms. Liberalization as an elegant antithesis of an all-embracing state controlled system was met with great enthusiasm. Liberalization of prices, dismantling of trade barriers and elimination of pervasive state intervention in the early 1990s, which was expected to result in large efficiency gains, brought instead the collapse of outputs and an unexpectedly harsh and prolonged crisis, to the surprise of many.

In the early 1990s, most CEE countries saw their *GDP per capita* drop one-third or more in real terms. With Hungary as a notable exception, the rest of CEE regained their 1990 *GDP per capita* levels only 10 years later, i.e. at the turn of the century. The developments in CEE, nonetheless, still represent a relative success, considering the even more prolonged transition crisis in most of the former USSR (newly independent states, NIS). Even by 2005, countries like Russia and Ukraine had not regained their 1990 level of *GDP per capita*, and some of the NIS, like Moldova, are still below 50% of their 1990 *GDP per capita*.⁴ Eventually, the 1990s proved a “lost decade” for most of the CEE countries in terms of *GDP per capita* (Figure 1).

In their initial analysis, some observers attempted to explain the collapse of outputs with a simple Keynesian recession, driven by a fall in consumer demand (see, e.g., Blanchard *et al.* 1991, Berg and Sachs 1992). Calvo and Coricelli (1992) were probably the first to argue that it was not, given the timing and magnitude of the economic collapse, a Keynesian recession, but a “trade implosion” – a phenomenon

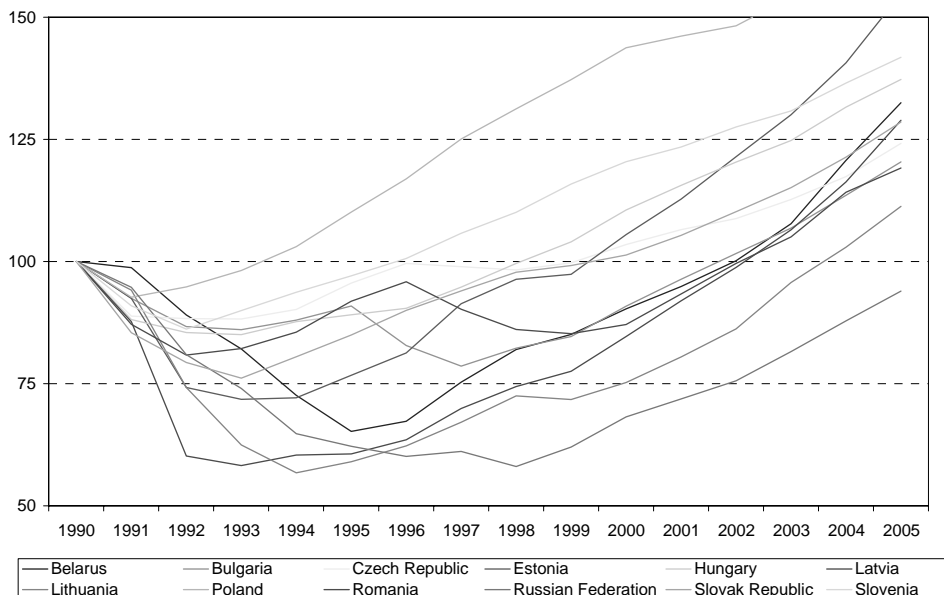


Figure 1. *GDP per capita* in CEE and NIS countries 1990–2005 (constant 2000 US\$), 1990 = 100. Source: World Bank (2007a).

ascribed to the break-up of the old system of coordination of production and exchange. This, in turn, gave rise to a theory of optimal (speed of) transition (see, e.g., Aghion and Blanchard 1994).

For planning and management purposes, a lot of Soviet industry developed into large complexes in a specific geographical area, forming something akin to the phenomena which Alfred Marshall called industrial districts (Marshall, 1890), or what we today call regional innovation systems (Cooke 1992) or clusters (Porter 1990). If one produced carpets, one often also produced machinery for carpet production. Such very strong vertical integration meant that the most successful and progressive Soviet companies often built their own ICT laboratories (however rudimentary) or had already invested in early biotechnologies in the late 1980s. This extreme vertical integration created huge interdependencies between different actors within the system. As a consequence, collapse of one part of the value chain brought down the entire chain.

We see transition, for the purposes of the following, as a process of *creative destruction* (Schumpeter 1942, Drechsler *et al.* 2006) in which an old production system is about to be replaced with a new, more knowledge-intensive, and thereby also more productive one. In this process, liberalization clearly contributed to the *destruction* of old, often rather rigid political, economic and social structures. *Creation* of new competitive strengths has, however, proved much more difficult in CEE than expected. We hold the view that various policies aiming at macroeconomic stabilization, such as controlling inflation or introducing currency boards, are not likely to be the root cause of the prolonged crisis. Credit contraction during the stabilization process may have made the impact of the crisis even harsher, but did not cause it.

It was the hastiness of transition itself, which did not allow enough room for gradual replacement of former credit allocation and production systems with new ones, that triggered the collapse of the entire system. This implies that the countries which were not in the position to opt for a radical transition to a liberalized market and started with a piecemeal step-by-step approach may have been in some ways better positioned, since they allowed their economic agents and systems of economic coordination more time for adjustment. One could, however, also argue that the choice of the speed of transition in CEE was a historic political necessity, and if no rapid changes had been undertaken the region would have fallen into prolonged stagnation, as has happened to most of the ex-USSR. Furthermore, as the experiences of Russia, Ukraine and Moldova exemplify (see above), postponement of reforms does not guarantee successful transition either.

Quality of economic change in CEE

By the 1980s, most of the CEE countries were relatively highly industrialized, but still lagged significantly behind the Western European average.⁵ For instance, in 1985, Latvia, Portugal and South Korea all had similar levels of industrial value added *per capita*, but since then, these countries' development paths have been very different in comparison to the European average. South Korea has experienced a remarkable increase in industrial value added *per capita*. The increase of Portugal's industrial value added has, at the same time, been quite modest, and in the early 1990s, the

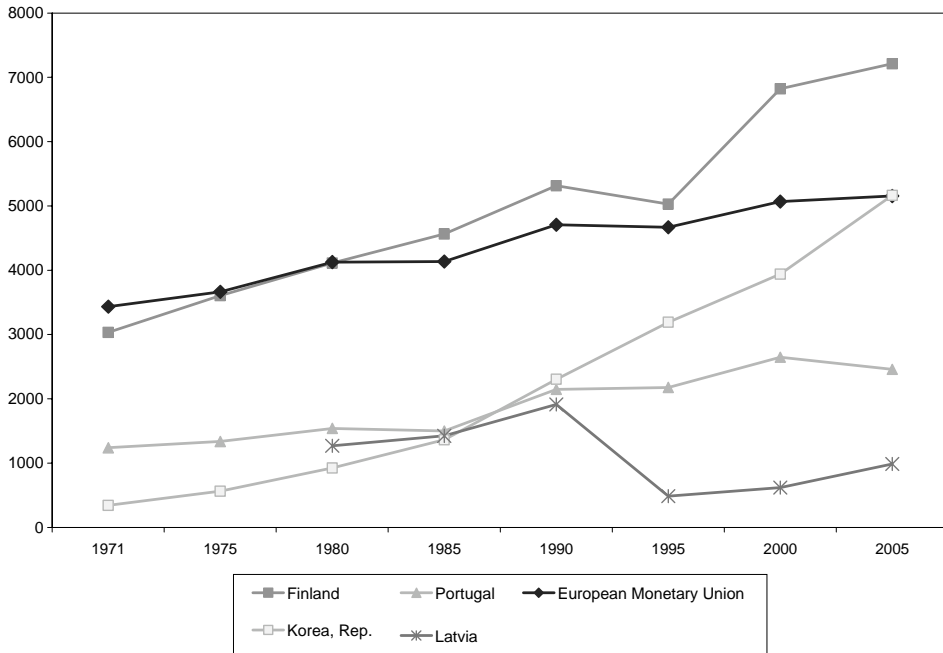


Figure 2. International comparison of industrial value added *per capita* (millions; constant 2000 US\$), 1971–2005. Source: World Bank (2007a) and authors’ calculations.

industrial value added *per capita* was marked by a rather drastic collapse of industry in Latvia (Figure 2).

Latvia’s case is, however, by no means unique. In the aftermath of the fall of the Berlin Wall, industry collapsed virtually all across Central and Eastern Europe. Most CEE countries saw steady growth in industrial value added up to 1990, after which there was a dramatic decline and countries like Estonia, Romania and the Czech Republic only recovered to their 1990 levels by 2004–2005 (Figure 3).

Inevitably, dynamic changes in the value added are also reflected in changing employment structures of economies, and in different sectors’ changing share of value added in GDP. While industrial employment declined only 5–10% in CEE in 1990–2005, the share of industrial value added in GDP dropped dramatically.⁶ These changes were accompanied by major gains in service employment, e.g. from 36 to 53% of total employment in Poland, and from 37 to 57% in Bulgaria from 1990 to 2005. Similarly, the share of services value added as a percentage of GDP rose very quickly in CEE countries in the period 1985–2005 (World Bank 2007a; Table 1).

It could be argued that the decline of industry in CEE was expected, as the pre-1990 economic specialization of CEE countries, and especially their high level of industrialization, was artificial. It could be argued that it was created by plans, not by market forces; that it was created by military and strategic needs, rather than existing comparative advantages in foreign trade, and thereby the decline was simply about return to equilibrium. However, one can still argue equally easily that the industrialization of East Asian economies in the second half of the twentieth century and the technological rise of the US west coast during the Cold War followed a very similar, largely military, strategic logic (see Wade 2004, Markusen 1999, respectively).

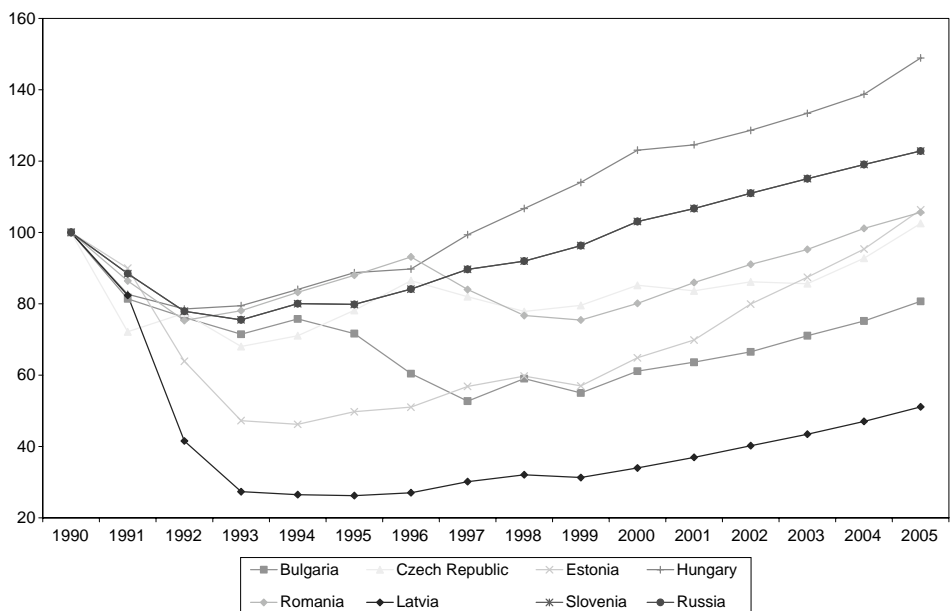


Figure 3. Industrial value added in selected CEE, NIS, European and Asian economies 1980–2005 (constant 2000 US\$), 1990 = 100. Note: The data for Lithuania, Poland and Slovakia are not available. Source: World Bank (2007a) and authors' calculations.

Alternatively, it can be argued that the rapid de-industrialization witnessed in most CEE countries (and, much more drastically, in all of the former Soviet Union) after 1990 was, at least partially, a process of natural de-industrialization, reflecting the nature of modern economic development, by which industrial jobs move to lower-cost locations and are replaced by relatively higher value added service jobs.⁷

Indeed, successful catching-up can be seen as “flying geese” development, whereby rapid economic development in a developed country and the gradual relocation of its economic activities to neighbouring countries, facilitates development of the latter. As the standard of living increases and the relative cost advantages fade away, the country catching up will start to abandon the less knowledge- and technology-intensive economic activities (Akamatsu 1935). This is how Western Europe industrialized step by step in the nineteenth century (Pollard 1987), and Japan and the East Asian “tigers” have done the same in the second half of the twentieth century.

Developments in CEE in the 1990s do not, however, seem to fit such a pattern very well. The above-mentioned “flying geese” development would imply rapidly increasing living standards which trigger the relocation of economic activities to lower cost locations, yet this is not what we have seen in CEE. Instead, the service sector in CEE countries by and large witnessed a similar development in the 1990s to industry: collapse in the early 1990s and recovery from the mid-1990s onwards. The main difference seems to be that the recovery in services was quicker: many CEE countries had already regained their 1990s levels of services value added by the late 1990s⁸ (Figure 4).

Both the industrial and services value added in Central and Eastern Europe remain, however, much lower than the Western European average in absolute terms.

Table 1. Value added in industry and services, percentage of GDP.

	1985		1990		1995		2000		2005	
	Industry	Services	Industry	Services	Industry	Services	Industry	Services	Industry	Services
Bulgaria	62.8	25.3	49.2	33.8	35.5	50.0	30.7	55.1	31.6	58.7
Czech Republic			48.8	45.0	38.3	56.7	38.1	58.0	37.2	59.8
Estonia ^a	43.6	35.5	49.7	33.7	29.3	62.7	26.5	68.0	29.4	66.6
Hungary ^b	47.0	35.2	39.1	46.4	32.3	60.6	33.5	62.1	31.1	65.1
Latvia	43.2	35.2	46.2	31.9	29.8	61.2	23.6	71.8	22.1	73.8
Lithuania			30.9	42.1	33.7	54.7	29.6	62.5	33.5	60.8
Poland	51.4	34.0	50.1	41.6	35.2	56.8	31.7	63.3	30.7	64.5
Romania			49.9	26.3	42.7	35.8	36.4	51.1	35.0	54.9
Slovakia	61.6	31.9	59.1	33.5	34.9	59.7	30.3	65.5	29.4	67.2
High income ^b	34.7	62.0	32.4	64.8	29.7	68.0	28.0	70.2	25.9	72.4

Notes: ^aThe earliest data available for Estonia is from 1997; ^bthe latest data available for Hungary and the group of high income countries is from 2004.

Source: World Bank (2007a).

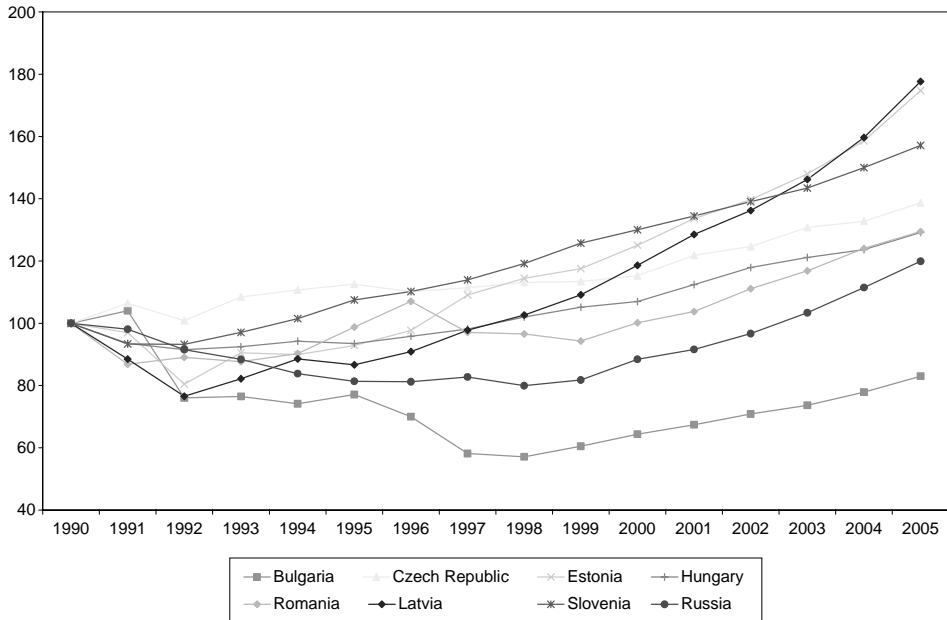


Figure 4. Services value added in selected CEE, NIS, European and Asian economies 1980–2005 (constant 2000 US\$), 1990 = 100. Note: The data for Lithuania, Poland and Slovakia are not available. Source: World Bank (2007a) and authors' calculations.

Even though the 2000s have led to a significant increase of value added in CEE countries both in industry and services, it is difficult to talk about the last decades as a period of strong catching up.

Successful catching up would encompass a gradual increase in the knowledge and technology intensity of industry (and internationally tradeable services; see Abramovitz 1986, Tiits *et al.* 2006), but this is not what we see in CEE. A closer look at the change in the share of medium- and high-level technology in manufactured exports (reflecting international competitiveness) and at industrial value added (reflecting the quality of the industrial structure) reveals that the new EU member states were more competitive in 1980 in terms of their production capabilities than in 2000. During the two decades, the East Asian “tigers” have caught up and bypassed old EU member states, while the CEE countries fell considerably behind in the 1990s and since then have not managed to improve their competitive position very much (Figure 5).

It should be noted here that dismantling the former planning system did not only demolish supply chains, but also cut off the (formerly) state-owned enterprises from their credit markets, as allocation of both production inputs and credits was an important element of the central planning system. During the transition period, financial transfers by the state from the Soviet period to the industrial companies were transformed into loans to the same companies by newly founded banks. Most of the companies were privatized. This increased the liabilities of already ailing companies, complicated restructuring of industry and increased risks in the banking sector. Thus, the approach to transition was prone to crisis from the very beginning.

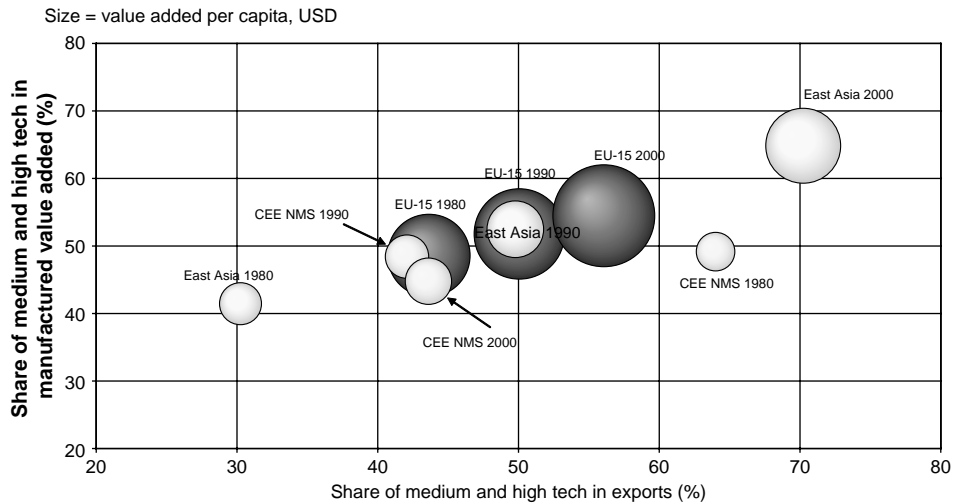


Figure 5. Quality of industrial change in selected world regions, 1980–2000. Source: UNIDO (2004) and authors’ calculations⁹

Eventually, only companies with previous experience in Western markets and which possibly were already integrated in some way into Western production networks managed to restructure and survive (a good case study is Radošević and Yoruk 2001).

Denial of access to finance, along with the speed of transition to the market economy, was perhaps the most crucial policy mistake made in CEE during transition. Rapid liberalization of markets and prices meant that for many domestic companies demand was cut down, and thus companies with highest relative fixed costs to variable costs (these tend also to be the most technologically advanced) were hardest hit as their balance sheets deteriorated very quickly. If a company has a lot of machinery and equipment to be amortized, i.e. where there have been recent investments for upgrading, the company is then hit particularly harshly if its demand drops and if it is under financial stress because of liabilities to newly founded banks. Thus, the most advanced industries are hit first by rapid liberalization, and also the hardest. This is called the Vanek–Reinert effect (Reinert 1980), and was observed in Latin America in the 1980s and again in the 1990s in CEE countries.

It is interesting to note in this context that, particularly since the latter half of the 1990s, CEE countries seem to be doing relatively well in terms of increasing the in share of medium- and high-technology exports (Havlik 2006). This has been largely driven by foreign direct investment inflows to these economies, and these investments are usually relocations of production from Western Europe to CEE (e.g. metal processing and automotive industry in the Czech Republic, Slovakia and Poland; assembly of telecommunications equipment in Hungary and Estonia; see Tiits 2006).

The above has given ground to very positive assessments of the CEE’s recent growth experience. It appears, however, that the extensive intra-industry trade between “old” and “new” EU countries is characterized by sustained dominance of vertical trade with distribution of quality differences in favour of the “old” EU, whereby quality advantages of the CEE candidate countries have tended to diminish (Gabrisch and Segnana 2003, p. 18). Moreover, it can be argued that

foreign direct investment in candidate countries [CEE; authors' note] seems to have had an almost negligible impact on change toward horizontal trade structures. This should trigger off a more moderate view on the role of foreign direct investment, which is too often seen as overly optimistic to contribute to catching-up in terms of quality and technology whenever trade has been liberalised (*ibid.*, p. 32).

In other words, recent relocation of production from "old" to "new" EU countries has not compensated for the loss of most knowledge- and technology-intensive industries in CEE in the early 1990s. Landabaso (1997) concluded in his earlier analysis of cross-country economic variations in the "old" EU that "there is a 'technology gap' twice as great as the so-called 'cohesion gap' (measured in terms of inter-regional differences in income, productivity and employment) between the developed and the less developed regions of the European Union". The technology gap in the enlarged European Union is, however, even wider than the variation between most of the EU's old member states. Furthermore, the increasing knowledge intensity of developed economies, intensifying global market competition and shortening technology life cycles contribute to widening, rather than lessening, such a technology gap.

Innovation and innovation policy in CEE

Perhaps the longest-lasting effect of the transition in the CEE described in previous sections appears in the education and R&D sectors. While the changes in industry and services described in the previous section were very rapid and often disruptive, education and R&D systems were left to their own devices in most CEE and NIS countries and with no significant structural change or resources for upgrading.¹⁰

Enterprises in CEE are typically in the lower end of the global value chain and the innovations they introduce are typically less knowledge-intensive – the role of practical experiences and related tacit knowledge is much higher than that of formal R&D, owing to their industrial specialization (for theoretical argument see, e.g., Pérez 2001). Although the share of R&D financed by the business enterprise sector has grown in some countries (e.g. the Czech Republic, Hungary, Estonia) rather rapidly in recent years, industrial R&D investment in 2005 still remained around a modest 0.2–0.4% of GDP¹¹ in most CEE countries (Eurostat 2007).

Many new companies in CEE have in fact been highly innovative in finding creative new ways to apply existing technologies, despite low formal R&D investment, by offering themselves, e.g., as cost-effective and reliable partners for outsource production. One of the most fundamental characteristics of CEE industry (and services) since 1990 has been that the majority of companies who have engaged predominantly in process innovation and have sought to become more and more cost-effective in the new market place while gaining quality advantages through the development of new products with market potential, have remained largely unsuccessful.

Both the cost of acquisition of machinery and private R&D investment, and thereby also innovation expenditure of enterprises, are of course very closely dependent on the structure of the industry of a given country. Science-based industries, such as bio-pharmaceuticals, ICT and electronics quite obviously demonstrate high R&D investment. Yet private R&D investments in countries with a limited science-based industry also appear low. Similarly, one would expect

scale-intensive and supplier-dominated industries, such as, for example, the production of metals and machinery, to demonstrate higher than average investment in equipment (Pavitt *et al.* 1989).

Given the structure of CEE industry, it is not at all surprising that research and development and innovation expenditures of enterprises in CEE are, in *per capita* terms, many times lower than their counterparts in the “old” EU, and that innovation expenditure consists largely of the acquisition of equipment and machinery¹² (Figure 6).

The *Community Innovation Survey 4* (CIS4) highlights lack of funds and high risks as the main factors that hamper innovation activities in CEE. Access to technology and markets is not seen to be a problem. Thus, not surprisingly, the *European Innovation Scoreboard* indicates that the number of science and engineering (S&E) graduates in CEE is below the EU average.¹³ It seems at first glance, given the record low interest rates experienced in Europe during the last few years, that the respondents of the Eurostat CIS4 survey have underestimated the difficulty of gaining reliable technology and market information, while overestimating their own strength (Table 2).

The CEE economic specialization on the low-end parts of the scale-intensive, supplier-dominated industries (with a limited number of well-known clients) seems to explain rather well why cost cutting, rather than increasing knowledge intensity, has become the underlying principle in CEE industry. The above also explains why CEE industry has demanded relatively little formalized education and learning, and why there has been, until recently, relatively little market demand to reform public education and R&D systems.

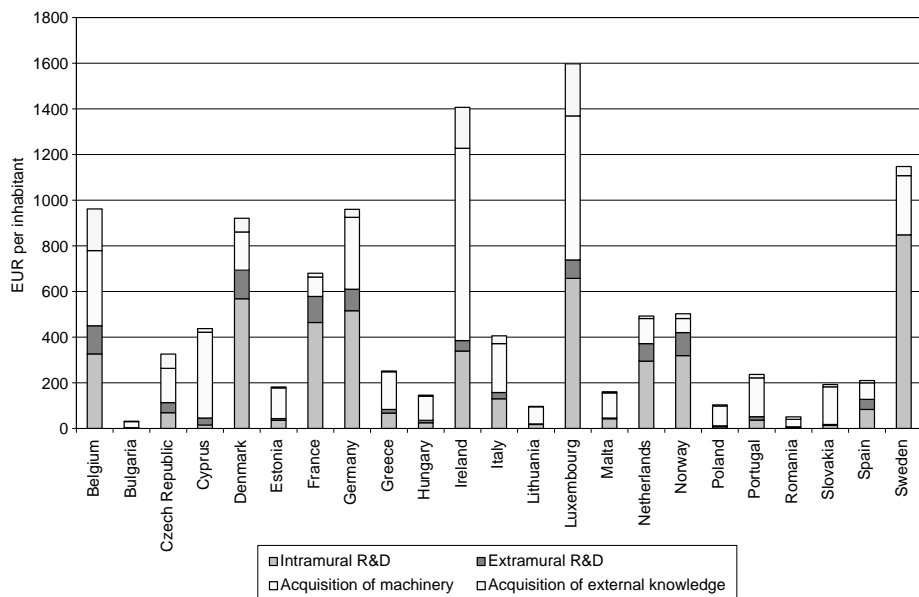


Figure 6. Innovation expenditure *per capita* in selected European countries, 2004. Note: No data on extramural R&D expenditure in Sweden is available. Source: Eurostat (2007).

Table 2. Hampered innovation activities: percentage of enterprises with innovation activities, 2004.

	BG	CZ	EE	LV	LT	HU	PL	RO	SI	SK
Lack of funds within your enterprise or enterprise group	24%	22%	28%	68%	25%	27%	31%	8%	31%	24%
Lack of finance from sources outside your enterprise	21%	12%	19%	58%	19%	20%	26%	30%	24%	16%
Innovation costs too high	26%	18%	21%	72%	22%	26%	32%	30%	24%	21%
Lack of qualified personnel	9%	10%	23%	72%	14%	7%	7%	14%	20%	8%
Lack of information on technology	6%	2%	4%	67%	7%	2%	5%	7%	5%	2%
Lack of information on markets	6%	4%	3%	64%	8%	3%	5%	0%	9%	4%
Difficulty in finding cooperation partners for innovation	11%	3%	6%	58%	8%	5%		16%	11%	7%
Markets dominated by established enterprises	15%	19%	16%	68%	19%	15%		21%	26%	14%
Uncertain demand for innovative goods or services	15%	12%	11%	62%	11%	15%	17%	16%	9%	12%
No need to innovate due to prior innovations	4%	3%	5%	37%	5%	2%		5%	1%	
No need to innovate because no demand for innovations	5%	3%	6%	43%	2%	3%		4%	5%	

Note: Latvia has been excluded due to obvious problems with quality of data.
Source: Eurostat (2007).

Until the early 2000s, scientists remained almost the only protagonists of science and technology policy in CEE. This is also probably why the R&D and innovation policies emerging in CEE in the late 1990s, and in particular with looming EU accession in the early 2000s, were rife with a quite specific, and often mystified, way of understanding innovation. Innovation was seen, in line with the post-World War II tradition, as a phenomenon close to science, believing that there is a more or less linear correspondence between scientific discovery and high innovation performance. Therefore, the technology push linear innovation models prevailed. Limited market demand for domestic science and technology competence was, however, taken as the inability of the public R&D sector to cooperate and commercialize research results and cater to the needs of private enterprises. Much of the policy learning in CEE was inspired by the ideas circulating among Western European policy-makers. It was thus understood that CEE was experiencing its own version of the “European paradox”: good public research and high levels of education, but little commercialization of research results in the private sector.¹⁴

We can see how CEE innovation policies attempting to imitate those of advanced industrial economies have concentrated on R&D-related activities, such as the commercialization of public research and the development of technology parks for research-intensive start-ups, etc., and have left the bulk of local industry simply out of consideration (see a very good summary in Radošević and Reid 2006).

Havlik *et al.* (2001) demonstrate at the same time that the adoption of the EU *acquis communautaire* has had a much stronger impact on the modernization of CEE industry than official innovation policy. Here, we see essentially a form of “unconscious innovation policy”, whereby, with the introduction of new regulation,

the industry is made to choose either to modernize their products and production facilities rather drastically, to subject themselves to mergers with bigger players with greater economies of scale, or to close down altogether. In addition, such harmonization with Western European standards made outsourcing and relocation of production much easier.

In some countries, for instance Estonia, EU accession triggered a very significant policy change which brought innovation policy onto the agenda very strongly; in others, for instance in Slovenia and Hungary, the changes in policy focus occurred earlier and were more vocal. However, the changes were and are often accompanied by relatively little increase in actual funding and, as importantly, by relatively little public attention and discussion of policy strategy. The existing case studies seem to also reveal that the *Regional Innovation Strategy* initiatives have had an equally limited impact on the economic development of target regions. All in all, the policy analysis and strategic planning capacity existing in CEE at the regional level seem to be even weaker than policy intelligence at the national level (Euro-Coop 2007).

The few policy and academic debates on R&D and innovation in CEE in the early and mid-1990s were largely plagued by a simple misunderstanding of innovation as something normatively and economically always positive. It is of course true that successful introduction of new products and services allows an enterprise with a relatively strong market position to sustain and strengthen its competitive position by commanding supreme prices in a specific market. Yet since Hans Singer's (1950) work, it is quite clear that innovation can also have a negative impact, especially when one operates in a sub-contracting or services industry facing severe cost competition and diminishing returns. In fact, this is why developing countries mostly experience globalization, in essence, as a process that brings more competition, lower prices and commodification. Particularly in agriculture and simpler services, innovation is often an emulation of competitors (e.g. using similar machinery) or a process readily available to all (e.g. ICT in the hotel industry). These bring lower prices to consumers, but also a so-called "commodity hell" to many companies, to their wages and profits.

On the other hand, there are clearly innovations that have the opposite effect: they bring new products, services and processes that are difficult to copy (or are protected with intellectual property rights), and thus bring higher profits and wages. This very often has to do with technological change and scale economies or, as Schumpeter put it, with historical increasing returns that lead to quickly rising market power and often to near-monopolistic competition (think of Microsoft).

We argue that in many CEE countries there are strong changes towards a more active role of the state in supporting the existing industry since EU accession, and that such changes have often taken place in policy discussions and coordination with EU officials rather than in local policy debates. More importantly, CEE innovation and industrial policy changes take place in a macroeconomic policy environment that has not really changed since the early 1990s. This environment is still based on the assumption that most of the industrial change that took place in the 1990s in CEE increased the competitiveness of these countries, and that the reasons for this lay in neoliberal policies that should be reinforced again today: lower taxes, balanced budgets and lower inflation that should result in the price and fiscal stability required for Euro accession. Such a policy environment has little to do with the industrial realities of many CEE companies; in fact, this policy environment reinforces the

economic specialization established during the 1990s, and brings with it almost no incentives for modernization of CEE education and R&D systems, which would allow for the gradual upgrading of competitive advantages of CEE economies.

Increasing financial fragility in CEE

Financial deepening or capital accumulation has classically been seen by economists as the main source of economic development (see e.g. Marx, 1867, Friedman and Friedman 1980). It is certainly one way of explaining the recent growth in CEE. Additionally, analysts focusing on the developments in the supply side of the CEE economies have highlighted one-off structural change related to trade reorientation, inflow of FDI and relocation of production as the main factors behind rapid growth in CEE countries since 1995 (see most recently Stephan 2003, Piech and Radošević 2006). However, rapid GDP growth and industrial change have not so far brought an increase of competitiveness to the CEE economies, but a deterioration of production systems. This can be seen both in the quality of industrial change and from the weakness of innovation systems in these economies.

Furthermore, recent developments in the most vulnerable CEE countries seem increasingly similar to pre-crisis developments in Finland and Sweden in the early 1990s, or in East Asia in the late 1990s (Kokko and Suzuki 2002). As on earlier occasions, the observed developments have seemed rational, as the CEE economies have been growing comparatively faster than those of the “old” EU. Rapid growth of foreign financing, including record high inflows of foreign direct investment (EIU 2007) sparked by relocation of production within Europe, have led to booming stock and real estate markets and bank lending (Figure 7). It has been easy to describe the rapid growth of asset prices in CEE, among other explanations, as a process of “natural economic convergence” and not an increasingly risky development pattern. This, in turn, has attracted more foreign funding, which has led to further deterioration of the CEE countries’ external positions.

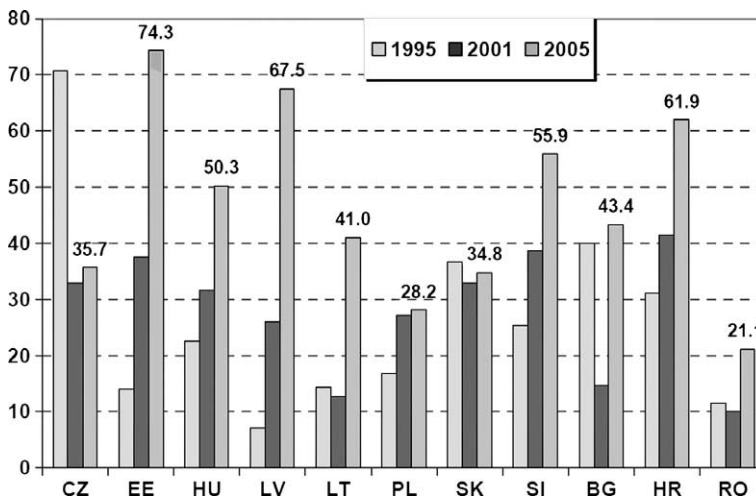


Figure 7. Bank credit to private sector, percentage of GDP, 1995–2005. Source: World Bank (2007b, p. 4).

The countries with fastest growth of private debt also experienced the greatest trade deficits in 2006, reaching 20% of GDP in Latvia and Bulgaria and 10% of GDP in Estonia, Lithuania and Romania (Eurostat 2007). Housing loans alone increased in Bulgaria between 2004 and 2005 by more than 95%, in Latvia and Lithuania by 90%, in Estonia by 75%, and in Poland, the Czech Republic and Slovakia by around 35–40%. As it happens, the most peripheral new EU member states which have experienced the fastest credit growth tend to be the least favourably integrated into European production networks and have the smallest foreign exchange reserves (Eurostat 2007); their commercial banks have the smallest loan loss reserves, reaching only 1% of gross loans in the Baltic States and about 2% in Romania and Bulgaria (for a detailed review, see, e.g., World Bank 2007b).

Since the early 1990s most of the CEE countries have experienced current account deficits resulting from the weakness of their industry, which has not allowed CEE countries to close their trade deficits. Modest current account deficits are usual in a catching-up environment, as a developing economy may need foreign technologies and other inputs to be able to do this successfully. However, as we have shown above, over the last 10–15 years CEE countries have experienced primitivization rather than strengthening of their competitive advantages and no significant bettering of external balances has taken place. Instead, recent foreign-financed growth has led to further worsening of current account deficits (Figure 8).

Some CEE countries, like Estonia and Latvia, have already witnessed the lowering of their credit risk ratings by various rating agencies, while a number of others, e.g. Hungary, Bulgaria and Romania, have become the subject of constant concern by the same rating agencies (see, e.g., Fitch 2007a–c). Similarly, the IMF, the World Bank and others have issued a number of warnings (Hilbers *et al.* 2005, World Bank 2007b). Equally, CEE policy makers have in recent years issued a number of public statements on increasing risks, attempting in this way to persuade consumers

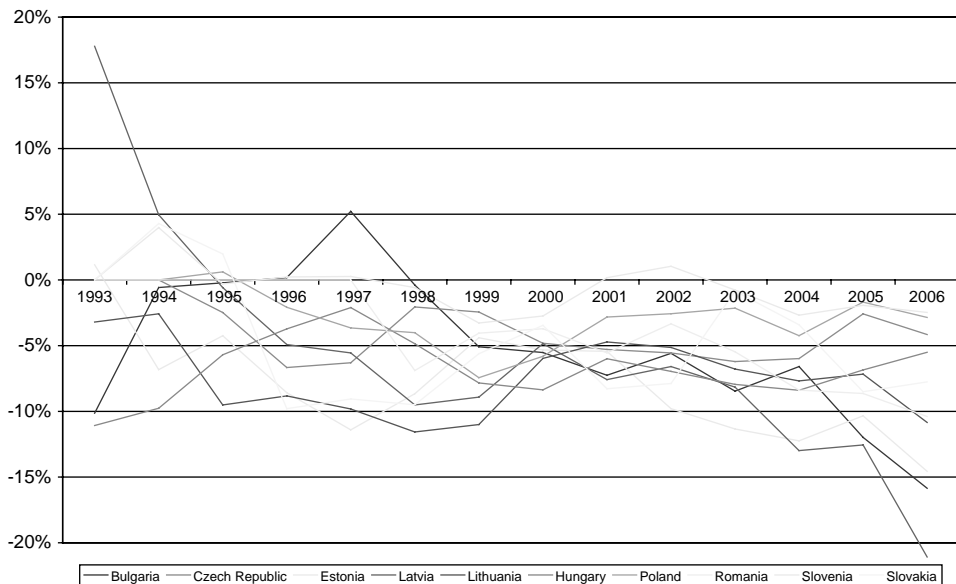


Figure 8. Current account balance 1993–2006. Source: Eurostat (2007).

against much stronger economic incentives to limit their long-term borrowing. Increasing the reserve requirements and maintaining a modest surplus on government budgets have perhaps been the strongest policy responses undertaken, but as shown above, these are clearly insufficient. Finally, CEE policy makers have missed the right moment to intervene effectively in the financial markets by restraining excessive credit growth. Therefore, excessive dependence on foreign funding and/or inability to mobilize adequate domestic savings have increased the financial fragility of the CEE economies (see also Nurkse 1952, on the role of the mobilization of domestic savings).

Speculative economic growth fuelled by domestic consumption based on foreign borrowing can, however, only be sustained as long as markets believe that these funds will yield higher expected returns than will be required to service them. As soon as this confidence is lost, massive outflow of funds from the country follows (see, e.g., Kregel 2004, Furman and Stiglitz 1998). This is the pattern we have witnessed in the last decades in a number of emerging economies. It is, however, perhaps the main difference from the financial crises witnessed in the last decades that, this time, excessive borrowing and booming asset markets are characteristic not only of CEE countries, but of a much broader set of both developed and emerging economies.

It is important to note that, in the context of the fragility of CEE economies, global financial issues and instabilities play only a secondary role. The difficulties of CEE economies in maintaining their external balances are still first and foremost a result of domestically chosen transition environments that enabled quick industrial restructuring with significant loss of skill and complexity; this has been reinforced further by recent speculative growth. Thus, we summarize our review with the realization that the CEE countries have counted too much on automatic developmental effects of market forces, and need not only to rethink and reinforce the role of the state and public funding in innovation and industrial policies, but moreover, their macroeconomic policies.

Conclusion

Developments in CEE countries since the early 1990s have been marked by different, sometimes seemingly contradictory, trends. While the short-term economic outlook in general still seems good, there are increasing concerns about the long-term sustainability of the current development pattern of CEE countries. Our analysis of the competitiveness of the CEE economies shows that they have not been catching up with, and in fact are falling behind, industrialized economies. The 1990s were, for most CEE countries, largely a “lost decade” in terms of GDP *per capita* growth.

The vast majority of the CEE countries implemented transition strategies which predominantly emphasized liberalization of markets, wage and price stability, containing public deficits, minimizing the tax burden, and strong market orientation in all socio-economic sectors. While some of these steps were of the utmost importance to enable the private sector to develop at all, it was mostly only companies with previous experience in Western markets and possibly already integrated in some way into Western production networks that managed to restructure and survive. Alongside changes in industry and services that were very rapid and often disruptive, education and R&D systems were at the same time left to

their own devices in most CEE and NIS countries with no significant structural change nor resources for upgrading. Emergence of R&D and innovation policies became noticeable only in the late 1990s, and in particular, with looming EU accession in the early 2000s. Previously, innovation was viewed in a linear way, and applied innovation policies were actually research policies that had little to do with the average enterprise.

In spite of the fact that the share of R&D financed by the business enterprise sector is very small, many companies in CEE have in fact been highly innovative in finding creative new ways to apply existing technologies, by offering themselves as cost-effective and reliable partners to outsource production, and so forth. It has been one of the most fundamental characteristics of CEE industry (and services) since 1990 that the majority of companies predominantly engaged in process innovation have sought to become more and more cost-effective in the new market place, while gaining quality advantages by developing new products with supreme characteristics; however, these companies have remained largely unsuccessful.

At the same time, CEE countries have profited from trading with European economies, which has often brought the need to manage production (in an outsourcing factory, for instance) in terms acceptable to Western partners, particularly in terms of quality. What has essentially happened is that CEE countries have specialized in industrial (and often also service) activities where Western Europe has lost its cost competitiveness. Thus, the loss of skill in the 1990s can be easily overlooked, as with the relocation of production – new “Zara” or “Ikea” factories keep popping up all over the CEE.

However, one-off developmental resources stemming from market liberalization and privatization, the boosting of the private entrepreneurial spirit and the reorganization of the existing production system seem to be largely exhausted. CEE countries mistook initial and continuing rapid growth for a response to their development policies. In reality, large parts of this success are attributable to two factors: techno-economic paradigm change and globalization with liberalization of markets. Technological revolution in information and communications technologies has indeed unleashed very powerful economic dynamics in the form of outsourcing and general mobility of industries and within industries. These aspects strongly enabled inflow of FDI and have allowed CEE to replace Soviet-style factories with modern industries, from mobile phones and ICT to designer clothing and furniture, giving the illusion of managing the economy and doing things right.

In 1980, CEE countries had qualitatively better industrial structures and were more similar to the East Asian economies than they are today. However, by 2000 the difference between these two groups of countries was remarkable. The quality of industrial change in the CEE countries in the 1990s indicates that the incentives created by the transition architecture for the private sector have not changed significantly over time, nor have these incentives significantly increased productivity of labour and, consequently, more income has not been generated.

Furthermore, recent foreign-funded speculative growth has led to a considerable weakening of the external positions of the CEE economies, and the region seems to have virtually arrived at the brink of economic collapse. The East Asian crisis forced Asian policy makers to rethink the risks related to excessive foreign currency-denominated borrowing and increased the volatility of global financial markets stemming from the liberalization of capital markets. The same also seems to be in

store for the CEE. Since joining the European Union, the CEE countries have gradually moved towards a more active role of the state in economic development. These policies, however, need to be strengthened considerably and reinforced by macroeconomic policies that curb current excessive dependence on foreign-financed growth.

Acknowledgements

The research for this paper was partially supported by European Commission EURO-COOP project, and Estonia Science Foundation grant no 6703.

Notes

1. In the context of this article, Central and Eastern European countries are the following 10 new member states of the European Union: Bulgaria, the Czech Republic, Hungary, Estonia, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.
2. Competitiveness is understood hereafter as the ability “to produce internationally competitive products and services (export), while at the same time maintaining or increasing the actual income of people” (OECD, 1992).
3. In particular, the Washington institutions (the World Bank and the IMF) have been strong advocates of such policies. However, also within academic discourse, such analysis abounds; see Broadman *et al.* (2005), for a recent example from numerous studies.
4. For a more detailed account, see, for example, Havlik (2006) and Bracho and López (2005).
5. This section builds partially on Reinert and Kattel (2007).
6. As a result, the share of CEE and NIS manufacturing in world manufacturing[0] plummeted from 19.3% in 1980 to 2.7% in 2001 (UNCTAD 2004, p. 89).
7. This is how today’s developed countries benefit from globalization, by shifting manufacturing to various low-cost locations while maintaining control over product development, coordination of offshore production networks, marketing, etc. Vernon’s (1966) work on interrelations of industry life cycles and evolution of international trade is a good way of explaining this.
8. We use here statistical definitions given by the World Bank WDI online database: services correspond to ISIC divisions 50–99. They include wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional and personal services such as education, health care and real estate services.
9. The calculations are based on averages. For some CEE countries, data is missing; however, most of the larger CEE economies like Hungary, Poland, Bulgaria and Romania are well represented, as are the Baltic States. East Asia includes South Korea, Singapore, Malaysia and Thailand.
10. Radošević (1999) uses the term “gradualism without therapy”, and for some countries even “shock without therapy” to describe the patterns of restructuring of R&D systems in CEE.
11. The Czech Republic and Slovenia, with their business sector R&D investment reaching 0.9% of GDP, are exceptions here.
12. There are a number of methodological problems with the Community Innovation Survey that make cross-national comparison difficult: for a small or medium-size subcontracting company in the low end of global production networks, each new contract may bring about new products or services and virtually complete reorganization of production, which CIS would record as “innovative activity”.
13. The case study by Kattel and Kalvet (2006) reveals that, besides the problems of quantity of labour, there are also problems with quality.

14. As it currently seems, the high quality of European science and education is largely a myth (Dosi *et al.*, 2006). CEE scientific output is, in comparison to leading European countries like Sweden and Finland, dwarfed (see Must, 2006).

References

- Abramovitz, M., 1986. Catching up, forging ahead, and falling behind. *Journal of economic history*, 46 (2), 385–406.
- Aghion, P. and Blanchard, O., 1994. On the speed of transition in Central Europe. In: S. Fischer and J. Rotemberg, eds. *NBER macroeconomics annual 1994*. Cambridge, MA: MIT Press.
- Akamatsu, K., 1935. Waga kuni yomo kogyohin no susei [Trend of Japanese Trade in Woolen Goods]. *Shogyo keizai ronso*, 13, 129–212.
- Berg, A. and Sachs, J., 1992. Structural adjustment in international trade in Eastern Europe: the case of Poland. *Economic policy*, 7 (14) (Eastern Europe), 117–173.
- Blanchard, O., Rudiger D., Krugman, P., Layard, R., and Summers, L., 1991. *Reform in Eastern Europe*. Cambridge, MA: MIT Press.
- Bracho, G. and López, J., 2005. *The economic collapse of Russia*, November 2005. Available from: http://www.ideaswebsite.org/featart/nov2005/fa11_Economic_Collapse.htm [Accessed March 2008].
- Broadman, H.G., Paas, T., and Welfens, P.J.J., eds 2005. *Economic liberalization and integration policy. Options for Eastern Europe and Russia*. Berlin: Springer.
- Calvo, G. and Coricelli, F., 1992. *Output collapse in Eastern Europe: the role of credit*. IMF Staff Paper no 92/64, August.
- Campos, N. and Coricelli, F., 2002. Growth in transition: what we know, what we don't and what we should. *Journal of economic literature*, 40, 793–836.
- Cooke, P., 1992. Regional innovation systems: competitive regulation in the new Europe. *Geoforum*, 23, 365–382.
- Dosi, G., Llerena, P., and Labini, M., 2006. The relationships between science, technologies and their exploitation: an illustration through the myths and realities of the so-called “European paradox”. *Research policy*, 35, 1450–1464.
- Drechsler, W., Backhaus, J.G., Burlamaqui, L., Chang, H.-J., Kalvet, T., Kattel, R., Kregel, J., and Reinert, E.S., 2006. Creative destruction management in Central and Eastern Europe: meeting the challenges of the techno-economic paradigm shift. In: T. Kalvet and R. Kattel, eds. *Creative destruction management: meeting the challenges of the techno-economic paradigm shift*. Tallinn: PRAXIS Center for Policy Studies, 15–30.
- EIU, 2007. Over the hill?, *Economist Intelligence Unit viewswire*, 25 July.
- Euro-Coop, 2007. *Report about data collection in the partner regions*, June. Available from: <http://www.iccr-international.org/euro-coop/>
- European Innovation Scoreboard*, 2006. Available from: http://www.proinno-europe.eu/doc/EIS2006_final.pdf.
- Eurostat, 2007. *Eurostat on-line database*. Available from: <http://ec.europa.eu/eurostat> [Accessed September 2007].
- Fitch, 2007a. *Risks rising in the Baltic States?* Special report, 6 March.
- Fitch, 2007b. *Bulgaria, Croatia, Romania – how sustainable are external imbalances?* Special report, 20 March.
- Fitch, 2007c. *The Baltic states: risks rising in the trailblazers of emerging Europe?* Special report, 8 June.
- Freeman, C., 1995. The “National System of Innovation” in historical perspective. *Cambridge journal of economics*, 19, 5–24.
- Friedman, M. and Friedman, R., 1980. *Free to choose*. London: Harcourt.

- Furman, J. and Stiglitz, J.E., 1998. *Economic crises: evidence and insights from East Asia*. Brookings Papers on Economic Activity, no 2.
- Gabrisch, H. and Segnana M.L., 2003. *Vertical and horizontal patterns of intra-industry trade between EU and candidate countries*. Halle: Institut für Wirtschaftsforschung Halle. Available from: http://www.iwh-halle.de/projects/productivity-gap/publications/Report_WP2.pdf.
- Havlik, P., 2006. *Macroeconomic restructuring in the new EU Member States and selected newly independent states: effects on growth, employment and productivity*. IndeuNIS Papers, February. Available from: <http://indeunis.wiwi.ac.at>.
- Havlik, P., Landesmann, M., Stehrer, R., Römisch, R., and Gilsätter, B., 2001. *Competitiveness of industry in CEE candidate countries: composite paper*. Vienna: Vienna Institute for International Economic Studies.
- Hilbers, P., Otker-Robe, I., Pasarbasioglu, C., and Jonsen, G., 2005. *Assessing and managing rapid credit growth and the role of supervisory and prudential policies*. IMF Working Paper 05/151, July.
- Kattel, R. and Kalvet, T., 2006. *Knowledge-based economy and ICT-related education: overview of the current situation and challenges for the education system*. Tallinn: PRAXIS Center for Policy Studies.
- Kokko, A. and Suzuki, K., 2002. The Nordic and Asian crises – common causes, different outcomes, October, manuscript.
- Kregel, J., 2004. *External financing for development and international financial instability*. G-24 Discussion Paper Series, United Nations. Available from: http://www.unctad.org/en/docs/gdsmdpbg2420048_en.pdf.
- Landabaso, M., 1997. The promotion of innovation in regional policy: proposals for a regional innovation strategy. *Entrepreneurship and regional development*, 9 (January–March).
- Markusen, A., 1999. National contexts and the emergence of second tier cities. In: A. Markusen et al., eds. *Second tier cities. Rapid growth beyond the metropolis*. Minneapolis, MN: University of Minnesota Press, 65–94.
- Marshall, A., 1890. *Principles of economics*. London: Macmillan.
- Marx, K., 1867. *Das Kapital*. Hamburg: Verlag von Otto Meissner.
- Must, Ü., 2006. ‘New’ countries in Europe – research, development and innovation strategies vs. bibliometric data. *Scientometrics*, 66 (2), 241–248.
- Nurkse, R., 1952. Some international aspects of the problem of economic development. *The American economic review*, 42 (2), 571–583.
- OECD, 1992. *Technology and the economy, the key relationships*. Paris: OECD.
- Ofer, G., 1987. Soviet economic growth: 1928–85. *Journal of economic literature*, 25 (4), 1767–1833.
- Pavitt, P., Robson, M., and Townsend, J., 1989. Technological accumulation, diversification and organisation in UK companies, 1945–1983. *Management science*, 35 (1), 81–98.
- Pérez, C., 2001. Technological change and opportunities for development as a moving target. *CEPAL review*, 75, 109–130.
- Pérez, C., 2002. *Technological revolutions and financial capital: the dynamics of bubbles and golden ages*. Cheltenham: Edward Elgar.
- Piech, K. and Radošević, S., eds, 2006. *The knowledge-based economy in Central and Eastern Europe: countries and industries in a process of change*. London: Palgrave Macmillan.
- Pollard, S., 1987. *Peaceful conquest: the industrialization of Europe, 1760–1970*. Oxford: Oxford University Press.
- Porter, M.E., 1990. *The competitive advantage of nations*. London: Macmillan.
- Radošević, S., 1999. *Restructuring and reintegration of science and technology systems in economies in transition*. Final Report of the TSER Project, contract no. SOE1-CT95-1008.
- Radošević, S. and Reid, A., 2006. Innovation policy for a knowledge-based economy in central and Eastern Europe: driver of growth or new layer of bureaucracy? In: Piech, K. and

- Radošević, S., eds. *The knowledge-based economy in Central and East European countries; countries and industries in a process of change*. London: Palgrave Macmillan, 295–313.
- Radošević, S. and Yoruk, D.E., 2001. *Videoton: the growth of enterprise through entrepreneurship and network alignment*. London: University College London, Center for the Study of Economic and Social Change in Europe, Working Paper no. 3.
- Reinert, E.S., 1980. *International trade and the economic mechanisms of underdevelopment*. PhD Thesis, Cornell University. Ann Arbor, MI, University Microfilms.
- Reinert, E.S. and Kattel, R., 2007. *European Eastern enlargement as Europe's attempted economic suicide? The Other Canon and Tallinn University of Technology Working Papers in Technology Governance and Economic Dynamics*, no. 14.
- Schumpeter, J., 1942. *Capitalism, socialism and democracy*. New York: Harper, 1975. [Originally published 1942.]
- Singer, H., 1950. The distribution of gains between investing and borrowing countries. *American economic review*, 40 (2), 473–485.
- Stephan, J., 2003. *Evolving structural patterns in the enlarging European division of labour: sectoral and branch specialisation and the potentials for closing the productivity gap*. Halle: Institut für Wirtschaftsforschung Halle.
- Tiits, M., Kattel, R., and Tarmo, K., 2006. *Made in Estonia*. Tartu: Institute of Baltic Studies.
- Tiits, M., 2006. Industrial and trade dynamics in the Baltic Sea Region since 1990s. In: R. Kattel and T. Kalvet, *Creative destruction management: meeting the challenges of the techno-economic paradigm shift*. Tallinn: PRAXIS Center for Policy Studies, 101–118.
- UNCTAD, 2004. *Development and globalization: facts and figures*. New York and Geneva: United Nations.
- UNIDO, 2004. *Industrial development report 2004. Industrialization, environment and the Millennium Development Goals in sub-Saharan Africa*. Vienna: UNIDO.
- Vernon, R., 1966. International investment and international trade in the product cycle. *The quarterly journal of economics*, 80(2), 190–207.
- Wade, R., 2004. *Governing the market. Economic theory and the role of government in East Asian industrialization*, 2nd edn. Princeton, NJ: Princeton University Press.
- World Bank, 2007a. *WDI online database*. Available from: <http://publications.worldbank.org/WDI> [Accessed June 2007].
- World Bank, 2007b. *Credit expansion in emerging Europe: a cause for concern?* World Bank EU8+2 Regular Economic Report, Part II, January.

Copyright of Innovation: The European Journal of Social Sciences is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.