

INTEGRATION, CATCHING-UP AND DEVELOPMENT CEILINGS

THE USABILITY AND EXPLANATORY CAPABILITY OF THE SEMI-PERIPHERY TERM IN THE ANALYSIS OF CENTRAL AND EASTERN EUROPEAN COUNTRIES' DEVELOPMENT TRAJECTORIES

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INTRODUCTON AND GOALS OF THE STUDY

The turning of Central and Eastern European (CEE) economies on the path of building a market economy, their subsequent integration into the European Union's economic space, and finding their place in it is a geo-economic process of pan-European or even broader significance that takes decades. It has not always been possible to adequately foresee the continuation of this process, the acceleration or slowing of economic growth, faster development of integration or its obstruction. The same goes for the dynamics of more global processes and crises, which all exert their influence on events in our region. Politicians as well as economists have offered unjustifiably optimistic forecasts and sometimes created groundlessly bleak scenarios. Theoretical bases for interpreting, directing and monitoring these ongoing processes have usually been hastily drafted "on the move" and then adjusted to conform to the current reality. As examples we can mention the economic transition theory, the "catching-up" types of approaches, and theoretical positions according to which the economic integration and various types of harmonisation were organised. Of course, there were certain more general theoretical foundations in the fields, such as the theory of economic growth, theories on international trade, developmental economics, etc., but all these were quite general and linking them to particular time periods and the specifics of the region was anything but easy.

The countries of the CEE region underwent several stages after escaping from the command economy, imposed geopolitical ties and communist ideology. This was the following sequence of stages characteristic for many countries: economic decline related to the system's change, during which the reorganisation of the economy according to market economy requirements had to be carried out (liberalisation, stabilisation, privatisation), followed by an initial growth period, then frequently some kind of intermediate crisis, preparations for EU integration (harmonisation), a period of new economic growth caused by EU accession (the effect of better access to markets as well as available structural funds), the decline caused by the global economic crisis, and then recovery as well as a new, but not very impressive growth period. While it was possible during the first six–seven years of this cycle to rely on the recently formulated economic transition theory, which, formulating it simply, merely prompted which moves to make and in which order so as to hope for new growth, afterwards there was no theoretical basis available for the subsequent developments, unless the excessively simplified liberalisation propaganda and claims of the necessity of a "thin state" can be considered one.

Various convergence estimates and forecasts were popular in the EU accession period, as well as the European Commission's consultations in drafting various development measures, showing how to reduce the gap between the new members and the core countries with the help of the structural funds and Brussels-recommended support programmes. While the new members did not have many opportunities during the accession negotiations to adjust the integration process according to their specific needs (besides applying for transition periods of limited durations), the EU financial support for the development of infrastructure and the funding of development policies improved CEE countries' opportunities to better cope with EU market pressure as well as that of the globalisation process in the wider sense.

After the end of the global economic crisis the new EU members were already regular members who no longer received as intensive attention as previously, while their economic growth and general development tended to slow down. The

productivity of the new members looked as if it would remain significantly lower than that of the old ones. Keywords like growth ceilings and development ceilings became relevant.¹

In fact, even during the pre-crisis boom period there were symptoms revealing that CEE countries' economic growth lacked a sustainable nature: with rising wages and increasing costs of other economic inputs it became necessary to rearrange the structure of the economy to enter a new stage of economic development, based on a knowledge economy. However, the CEE economies were not ready for this. In fact, they were not the only ones in Europe to face that problem. Veugelers and Mrak find when analysing the economic growth dynamics of the Visegrád Group of new EU members and the EU cohesion countries (the countries joining the EU before the post-socialist group, predominantly Southern European states) that in case of either group their economic growth accelerated and the developmental gap with the old EU members shrank significantly, especially among the post-socialist countries, but then the growth engine lost momentum.² Economic growth reached a limit that reduced the development rate and did not permit them to catch up as rapidly as the East Asian growth champions had shown.³ When analysing the slowing of this catching-up process, the authors reached an important conclusion: within-industry spillover effects are as either absent or very weak. The reasons are, in case of firms owned by foreign investors, their relative isolation from the other economies of the location countries, and in case of firms based on domestic capital, their low levels of business sophistication and limited ability to form clusters.

There seems to be a lack of clarity regarding the growth potential of the new member countries and the conditions for releasing it. This article attempts to introduce, in order to further study the development prospects of the CEE countries, the treatment used by E. Wallerstein about semi-periphery countries and semi-periphery economies, i.e. the countries and economies that are located between the core and the periphery, and possess the features of both groups (more about it later on).⁴ This is not a very unequivocal or operational concept, which certainly needs further elaboration before using, but the approach proposed by Wallerstein has several attractive qualities. First, it concentrates attention on the external relations and dependencies of a country's economy, its position and role in the world economy. This approach is essentially structuralist, and postulates the existence of long-term dependencies. For these two reasons its emphasis is somewhat different than that of the middle-income trap concept, which has been quite widely used so far.⁵ Both address the situation where the countries that do not belong among the wealthiest or poorest ones tend to experience a standstill of growth in a certain stage of development primarily due to the increasing cost of production. Yet the concept of the middle-income trap concentrates more on the domestic factors of the economy of the country under observation, while the semi-periphery concept focuses

¹ Goeke, H. and Hüther, M., 2016. Regional Convergence in Europe, Leibnitz Information Centre for Economics; Parscariu G.C. and M.A.P. de Silva Duarte (ed.), 2017. Core Periphery Patterns across the European Union: Case Studies and Lessons from Eastern and Southern Europe. Emerald Publishing; Kaletovic D., 2018. Has Eastern European Economic Growth Hit a Ceiling?, Schafelhaven Market Insider, 20th of August.

² R. Veugelers and Mrak M., 2009. The Knowledge Economy and Catching-up Member States of the European Union, Report prepared for Commissioner's Potocnik's Expert Group, "Knowledge for Growth". In case of the Baltic States the growth continued but since it was largely based on the inflow of cheap financial capital thanks to the European Central Bank's interest policy rather than the actual competitiveness of the economy, which declined due to growth in wages, this growth ended with a very steep fall during the international economic crisis.

³ Observing the growth rate of the more successful CEE countries in the period following the end of the economic decline caused by the change of regime shows that the leading CEE countries' growth rates were comparable to that of the East Asian "tigers". Yet a study of a longer time period and consideration of the CEE countries' growth slowdown makes it evident that the East Asian countries' catching up process has been significantly more sustainable. Further details see: Terk E., 2015. Practicing Catching up: a Comparison of Development Models of East Asian and Central Eastern European Countries. Frankfurt: Peter Lang Verlag.

⁴ Wallerstein I. M., 1976. Semi-Peripheral Countries and the Contemporary World Crisis. Theory and Society. Elsevier; Giovanni Arrighi G. and J. Drangel., 1986. The Stratification of the World Economy: An Exploration of the Semiperipheral Zone. Review 10:9.

⁵ Shekhar A. et al, 2013. Growth Slowdowns and the Middle-Income Trap. IMF Working Paper.

more on outside factors and dependencies.⁶ Secondly, the concept of semi-periphery countries considers that the relation between the core and the peripheries occurs in a geographic space and are, as a rule, long-term. This permits the set of instruments of geo-economics and geopolitics to be used to analyse these relations. As a rule the cores are dominant in the geographically closer peripheries and semi-peripheries. Thirdly, the developments of the CEE economies have so far been predominantly treated “in their own juice”, the development of some CEE countries has been compared only with other CEE countries—which ones passed the transition better, showed the fastest growth, achieved better cooperation with the EU core countries, etc. Analysis in the context of semi-periphery countries permits the span of the analysis to be effectively doubled to a global dimension, comparing the development of the CEE countries and their prospects not only with Southern European semi-periphery countries but, if so desired, with semi-periphery countries in South America. Of course, this would attract greater interest if it should appear that there are sufficient common features among the semi-periphery countries’ parameters, economic behaviour and problems they face.

While preparing the present article we set the following goals:

- To verify whether the economies traditionally considered as semi-periphery economies form a relatively homogeneous body (or bodies) in reality. If no, there would be no reason to use this concept as a basis or the definition of semi-periphery economies should be significantly adjusted. The CEE economies are studied in this analysis as one of the specimens of semi-periphery economies;
- To determine which features are common for the body of semi-periphery economies under observation as a whole and which for their more specific manifestations;
- To test the constancy in time (over a 10–12-year period) of the homogeneities of the general complex of semi-periphery countries and its sub-groups;
- To study the changes of the positioning in the world economy of two European semi-periphery economic bodies in comparison with the world’s core economies and the economies that have succeeded in leaping from one stratum of economic development to another within recent decades;
- To clarify important changes in the development indicators characterising semi-periphery countries’ economies occurring in a time period, including the indicators of the final state of their economic success and the indicators of the most important factors contributing to development;
- To try to identify the factors mainly influencing the changes in the final state (positioning) and the factors possibly obstructing the movement of their economies to a better position;
- After carrying out the analysis, to derive conclusions regarding the opportunities for further use of the semi-periphery concept and the limits of its implementation.

On the approaches to the semi-periphery category

The division of states into three groups—the periphery, the core and the semi-periphery—is primarily known from the Wallerstein World Systems Theory, yet the use of approaches based on differentiation between the core and the periphery and in that framework highlighting the semi-periphery as an interface stratum is not principally alien to other schools and

⁶ In case of the concept of the middle-income trap, the proposed solutions focus on the diversification of the hitherto too unilateral economic structure, suppressing domestic corruption, measures for creating a wider wealthy middle class, whose demand could help to invigorate the domestic market, etc. Work on the middle-income trap also seems to be meant for countries only recently emerging from the stage of cheap and elementary, e.g. resource-based economy; in case of economies at the development level of the Czech Republic or Slovenia, which face the need to change their economies’ positioning in the international economy, such recommendations may prove insufficient.

authors either (e.g. Paul Krugman's new trade theory/new economic geography). It is presumed that what is happening in the core has a very strong impact on the periphery (and the semi-periphery); figuratively speaking, the core shapes the periphery for itself, the core-periphery system possesses a certain stability, and it is not that easy to move between the strata within these systems. Of course, it depends on the various concepts of how stable or unchanging these structures are viewed or whether one core or several are discussed, etc.

The Wallerstein school, when studying the hierarchic domination relations treated in the core-periphery theory, primarily proceeds from the pattern of international economic relations as basic, and the question of political domination is not ignored, but treated as secondary in the framework of established economic dependencies.

The World Systems analysis, which was initiated by Wallerstein, defines semi-periphery regions as the primary structural elements in the economy of the world. Semi-periphery is more than a description, as it also serves as a position within the world hierarchy in which economic and social change can be interpreted. Wallerstein claims that these regions play a significant role when it comes to mediating the economic, political and social, activities linking the periphery region with the core. They allow the possibility of dominance over the periphery region. Semi-periphery countries can serve to alleviate the political pressures that the core can exert upon the periphery and the political unrest that the periphery can direct back to the core. Thus they stabilise the World System by their existence. They are exploited by the core region while exploiting the periphery region itself.

However, S. Babones and P. Babcicky⁷ describe in their article Wallerstein's explanation of the origins of the semi-periphery as a bit teleological (it exists because if it did not exist the system would not be stable) and a bit improbable (we don't see much evidence of systematic semi-peripheral exploitation of the periphery), yet they find that that this intermediate stratum exists in reality and that the category of semi-periphery would be, after carrying out the necessary elaborations, a useful instrument for analysis.

A. Giddens believes that Wallerstein's concept has made a major contribution by enabling the typical temptation of orthodox sociology to treat social changes as predominantly endogenic to be overcome within the framework of the concept. Admittedly, he also criticises Wallerstein for insufficient recognition of the autonomy of the (foreign) political and military factors from the economic one, since the concentration of political and military power in the world does not unequivocally proceed from economic concentration.⁸ He cites Wallerstein's specific interpretation of the concept of capitalism as the reason for this drawback.

Indeed, there have been several attempts in recent decades to elaborate on and develop the concept of semi-periphery. One of them, for instance, is the attempt to differentiate between the semi-core and semi-peripheral specialisation profiles in the international economy.⁹ The authors relate the former to specialisation in complex industry in particular and thus consider it more promising. One option for differentiation between core economies on the one hand and the semi-core or semi-periphery economies on the other is to concentrate on the state's capability of maintaining its positive balance of payments long-term. For instance, if Spain should be incapable of achieving that, it should not be included among the core economies, as a negative balance of payments is a sign of a state's inability to manage independently and its descent in the role of a dependent economy.¹⁰

The approach more typical to political science considers it important to distinguish between the semi-periphery accepting its dependence on the core with probable perspectives of stagnation and the semi-periphery attempting to follow an independent economic policy. The latter variant is related to the concept of state activism and the strong state.¹¹

⁷ Babones S. and Ph. Babcicky, 2011. Russia and East—Central Europe in the Modern World System: A Structuralist Perspective.

⁸ Giddens A. and S. Griffiths, 2006. *Sociology* (5th Edition). Polity Press.

⁹ Bohle D. and B. Greskovits, 2012. *Capitalist Diversity on Europe's Periphery*. Cornell University Press.

¹⁰ Braeu R., 2018. *Is Spain Becoming Semi-Core?* Standish Market Insights, February 2018.

¹¹ Babones S. and Ph. Babcicky, 2011. Russia and East Central Europe in the Modern World System: A Structuralist Perspective.

Wallerstein's theory and the quite closely related dependency theory have been criticised for their inability to sufficiently reflect the realities of the 21st century, especially globalisation (the decline of the role of the states and the rise of the role of transnational corporations, etc.). This criticism is partly justified, but as several authors¹² have emphasised, this does not mean that the semi-periphery has disappeared in the 21st century world or that the significance of this category has declined. It does mean that this category needs certain reappraisal and elaboration based on newly acquired material. The period of globalisation has brought along significant changes in the international division of labour as well as the relations between economics and politics, while, as the latest developments have shown, the development of globalisation need not be irreversible and accelerating; there may be setbacks and globalisation may undergo modifications.

One of the arguments brought out against the use of the semi-periphery category claims that the dependencies are much more complicated in the contemporary world. Some countries, for example oil-producing countries, may be interpreted as a periphery from one viewpoint, and very much a core from the other. Additionally, regional domestic differences have increased in today's countries, including those of CEE. Would it be proper to describe for example Hungary as a semi-periphery country if Budapest is a quite wealthy city?¹³ Such objections partially derive from considerations of prestige: the EU member countries, for example, are not very willing to be related to the (semi-) periphery and prefer emphasising that admission to the EU should guarantee a state's sterling quality and is sufficient for feeling like a part of the core, either economically or politically.

Although there is no unequivocal understanding of which countries should be considered new semi-peripheries, this category is usually seen as covering the so-called cohesion countries of the southern part of the EU (Portugal, Greece, Cyprus, Spain)¹⁴, most of the former post-socialist countries of Europe, and primarily East Asian countries: after Japan, Taiwan, which has chosen the export-centred development strategy, South Korea, Thailand, Malaysia, and the People's Republic of China as a rising star as well. Singapore has already moved on to a status somewhere between a semi-periphery and core economy. The western part of Asia provides Turkey and Israel, sometimes also Iran and Lebanon. In case of the American continent it includes the more highly developed part of South and Central American countries (Argentina, Uruguay, Chile, Mexico, for some authors also Brazil). In Africa only the Republic of South Africa is sometimes mentioned. The above list does not include all countries that have displayed rapid economic growth and improved their positions in GDP-based rankings. Some of the "upwardly mobile" countries are, according to their economic and social parameters, still periphery countries, which could be described as capable of exiting the status of periphery economies provided that their growth will continue: India, Indonesia, the Philippines and Vietnam. Regarding India and Brazil it can be argued that they have only partly reached the economic wealth necessary for semi-periphery status (some wealthier provinces). Yet the existing literature is not very homogeneous concerning this issue, as some of these states are interpreted by some authors as semi-periphery countries.¹⁵

The issue of distinguishing between the semi-periphery and the core is also a problematic one, which actually has not been discussed profoundly enough. There is no doubt that the former semi-periphery country Japan has long ago become a core country, while Singapore should also be included among the core, considering its level of development and wealth. Taiwan

¹² Worth O. and Ph. Moore (ed.), 2009. "Globalization and the 'New' Semi-Peripheries". Palgrave & Macmillan.

¹³ Bod P. A., 2015. *A World of Peripheries—Hungarian Review*, vol. VI, No. 5.

¹⁴ Some authors also include Austria.

¹⁵ Authors with a political science or sociology background do not usually consider the lower limit of a state's wealth important to treat it as a semi-periphery country. Their approach proceeds from the role the state performs in the World System and an important role, at least politically, can also be played by countries with a low per capita GDP. Yet "lumping together" countries with very different levels of wealth reduces the meaning of the comparative analyses of their economic development; the behavioural patterns of countries of different levels of wealth cannot be too similar. For example, comparison of the economic behavioural patterns of Austria and Brazil is unlikely to yield meaningful additional information. It seems that the Wallerstein school tends to list in particular the larger countries as semi-peripheries. Representatives of the World Systems Theory consider the political strength factor important in maintaining dominance or vice versa breaking it up and escaping dominance; larger states thus inevitably shift to the foreground. Larger countries also possess a greater ability to marshal their economic resources and thus lead a more independent economic policy.

and the Republic of Ireland could be placed somewhere between the semi-periphery and the core as well. Their GDP per capita level is comparable to the core countries as to its per capita GDP and wage levels, although it still displays features characteristic of a semi-periphery country as to its role in the international economy and some other indicators, e.g. the dual economic structure, where the foreign capital-based part of the economy, including a large share of the high-technology sector, operates in relative separation from the rest of the country's economy. South Korea, on the other hand, is clearly a semi-periphery country as to the aforementioned indicators, yet as to its role in the international economy and positioning in global value chains is similar to a core country.

In case of several unevenly developed Southern European countries (Italy, Spain) it can be argued that only a certain geographic part of them has shifted to the core countries' trajectory (e.g. Northern Italy) rather than the entire state.¹⁶

The vagueness in defining the category of semi-periphery is also caused in Wallerstein's case apparently by the fact that he operated with this category on a historically long timeline spanning centuries; therefore, it is difficult to find a definition that would be adequate in the 17th as well as the 21st centuries, for example. In the most general way the semi-periphery countries are defined as countries with average industrialisation and income levels,¹⁷ but this leaves their profile of specialisation open. Earlier it meant the production of predominantly agricultural products and raw materials for the core countries; at present mainly less sophisticated work in the manufacturing value chain,¹⁸ and in the future maybe the supply of certain types of services.

In theory, the primary criterion for designating the semi-periphery remains their similar role in the international division of labour along with the resulting peculiarities, rather than their wealth and standard of living. For example, most authors have problems in defining the wealthy oil-producing countries as belonging to either the core or the semi-periphery and view them as a separate category. It could be argued in principle of course that the semi-periphery countries are of average wealth at the global level, yet this zone of wealth varies quite widely, starting from per capita GDP of some USD 18,000 (this is more or less the world average and the PRC has just reached it) and reaching approximately USD 40,000 per capita or slightly above that (the level of South Korea and Spain). In the ranking of wealth this means the range roughly between 30th and 75th places.¹⁹

Developing methodology for empirical study

In order to find answers to the questions posed at the beginning of the article we developed a methodology for the empirical study, which will be described below.

The study concentrated on two groups of semi-periphery countries in Europe.²⁰ First, the eight CEE countries that acceded to the EU in 2004, and Croatia, which joined in 2013. Hereinafter it will be designated as the CEE group. Secondly, the so-called

¹⁶ Globalisation, by creating quilt-type development, reinforces this tendency.

¹⁷ For example Giddens A. and S. Griffiths, 2006. *Sociology* (5th Edition). Polity Press.

¹⁸ A certain difference exists between CEE countries and Eastern European countries, e.g. Russia. While the CEE countries have entered the world economy mainly through manufacturing, Russia is involved predominantly as a processor of raw materials.

¹⁹ Dependent on whether the list includes some microstates like San Marino and St Kitts and Nevis and special-status territories like Macao. Some rankings compiled for comparing different development indicators include them, while others do not.

²⁰ More precisely: the countries regarding which we could presume that the progress of the study will confirm, based on their links with international economy, economic parameters and economic behavioural patterns, that they belong to the group of countries that could be generally described as semi-periphery countries. We could not completely rule out that the economies of some countries selected for the sample would have more in common with the economies of core countries or other genuine periphery countries. We did not consider it necessary to start the study with a highly accurate definition of semi-periphery country/economy; the study was rather viewed as a measure for elaborating such definitions.

cohesion countries of the EU—Spain, Portugal and Greece—along with Cyprus, which joined the EU in 2004. Hereafter they will be collectively described as the Southern group of the semi-periphery countries.

The fact that all the countries under observation are members of the EU should improve the comparability of the results.

A questionable solution is the omission of Bulgaria and Romania from the sample of countries, while Croatia has been included in it. An argument in favour of including Croatia in the sample was the fact that its neighbour Slovenia, another former part of Yugoslavia, was among the countries being studied. This opened a certain opportunity to treat the CEE countries, if so desired, as two sub-groups: the northern and the southern (south-eastern).

We also feared that the inclusion of Bulgaria as a country of significantly lower per capita GDP than the others would make the sample too heterogeneous as to economic wealth (from Spain's and Malta's per capita GDP at USD 38–39,000 to Bulgaria's level of USD 20,000).

In addition to the two groups of semi-periphery countries, two reference groups were used in the study: a group of seven core countries/economies and a group of so-called breakthrough economies, including six countries.

Since the borders between the core and semi-periphery countries are quite vague in theoretical works, we attempted to use the strictest selection criteria of the core countries, i.e. by including the countries that have stood out for a long period for their high wealth levels and that are also known as homes of large, multinational corporations. These are the countries whose economic and international policies display a definite international extent. The sample was formed so as to also include smaller countries in addition to great powers. The group includes the US, Germany, the UK, the Netherlands, Sweden, Switzerland and Japan.

The reference group of the breakthrough economies included the countries that have made a major leap in their economic development and improving their international economic positions in recent decades. The upsurge of their development occurred later in some cases and earlier in others (e.g. Finland managed it somewhat earlier than others). We did not attempt to define whether they could be currently considered as core countries (there are arguments in favour in case of, e.g. Singapore and Ireland) or semi-periphery countries. What matters for their selection is the fact of their movement from the semi-periphery towards the core. Although statistics show in case of some of these countries a higher per capita GDP level than in some core group countries, none of them belongs to the sample of “old wealthy countries”. The selection included Singapore, Ireland, Finland, Israel, Taiwan and the Republic of Korea.

Table 1 contains, in addition to data concerning these groups, comparable data on the “rising star”, China.

The direct objects of our study are the semi-periphery countries. Internal shifts in the two other groups, those of leader countries and breakthrough countries, will not be addressed. The study will discuss only the state and dynamics of certain parameters of these groups compared with the semi-periphery economies' group and its subgroups.

Next we had to draft a body of indicators based on the existing statistics and research data, where the central position would be occupied, according to our theoretical basic concept, by indicators characterising the integration of the countries' economies into the international economic system and which would allow for the reflection and analysis of shifts in the semi-periphery countries' economic behaviour compared with the other groups of countries (the core countries' and the breakthrough countries' economies) and the improvement or deterioration of their relative position against the global setting.

Most of the indicators used derive from the database used by the World Economic Forum (WEF),²¹ which have been complemented by other indicators from the UN, WB and OECD databases. Compared with the analyses made for the Global Competitiveness Reports the focus of the analysis has been significantly modified.

²¹ Schwab K., (ed.) 2018. World Competitiveness Report 2017–2018, World Economic Forum, Geneva; Lopez-Claros A. (ed.), 2007. World Competitiveness Report 2006–2007, World Economic Forum, Geneva.

The system of indicators comprises three blocks. Block 1: general conditions necessary for economic development. This includes three indicators for measuring the education level of the population and the index built by the WEF for measuring the institutional quality level of the environment.

Block 2: indicators reflecting the type of integration of the country's economy in the international economy. This includes indicators like the share of export of GDP, the share of inward FDI stock of GDP, the balance of inward and outward FDI, expert opinion about how much FDIs in a specific country contribute to the development of the technological level (from the WEF database), and two indicators reflecting the positioning of enterprises in the value chain (resulting from interviews with experts): the value chain breadth and control over international marketing channels. Combined with them, we also used indicators showing the nature of the products' competitive advantage, the sophistication of the production process and the domestic clustering of enterprises as well as the innovation capability index of a country's economy, used by the WEF.

Block 3: Indicators measuring output, the positioning of the state in the global ranking of per capita GDP plus the general competitiveness index of a country's economy as used by the WEF (again expressed as the state's global ranking).²²

Regarding the above there are comparable basic indicators for 2017 as well as 2006, i.e. the year preceding the global crisis. This permits analysis of the change of output indicators as well as the indicators of the first two blocks across quite a long period, and building hypotheses about their mutual relation.

Since a majority of the indicators have been provided as rankings (see Table 1) it allows for the elimination of the effects caused by the short-term changes in the parameters of the business environment in the different sub-stages of the cycle of the world economy.

Semi-periphery economies from the viewpoint of per capita GDP level

The groups of economies under observation contain the upper half and middle section of the countries usually treated as semi-periphery and are therefore quite homogeneous (USD 25,300–38,100 per capita, predominantly the range between USD 28,000 and 35,000 per capita). The extremes are, on the one hand, Spain and Malta in the Southern group and on the other hand, Croatia in the post-socialist countries group. In terms of global rankings the positions are between 30 and 54, after discarding extreme cases between positions 33 and 49. Top performers of the CEE group (the Czech Republic, Slovenia, Estonia) have even higher GDP per capita indicators than some of the countries from the Southern group (Greece and Portugal).

The difference in wealth between the leader countries and semi-periphery countries is apparent, but the gap between the wealthier ones in per capita GDP is not disastrously wide (4–5 thousand USD per capita). It is another matter that as far as the development indicators necessary for producing economic growth in semi-periphery countries with higher per capita GDP go (more about that further on), there is no ground for presuming that any of the semi-periphery countries represented in this table could pose a threat to the leader group as to per capita GDP or GNI within the next ten years, for example. To provide some background: some earlier breakthrough countries, which took off from the semi or full periphery have already boosted their per capita GDP indicators not merely to the level of the leader countries, but compete with their elite—Singapore, Ireland.

²² This index is composed on the bases of more than 120 separate indicators and is divided into 12 groups, so-called pillars (macro-economic situation, quality of institutions, position in different markets, innovation, etc.).

Semi-periphery economies from the aspect of fundamental development premises

We hereby refer to, first, the general quality of institutions and, secondly, the standards of the education system.

Institutions. Ratings of institutional quality²³ bring out clear differences between the groups provided in the table. The semi-periphery countries lag far behind the leader countries as well as the breakthrough countries (with the exception of Estonia, whose general index of institutional quality is above the corresponding indices of some breakthrough countries (South Korea, Taiwan)). The level of institutional development varies very widely in the group of semi-periphery countries being analysed, from 24th place in the global ranking to 102nd place, while the broadening of the range of variety has emerged in the past decade; it used to be almost half as wide. Particularly large differences in institutional quality can be observed in the CEE group of countries: from Estonia's high level to low standards in Croatia, Hungary and Latvia. The Southern group of the semi-periphery countries is more homogeneous in that respect (while Greece lags behind the others).

When observing the dynamics of rankings of institutional development in the past decade we can notice contradictory tendencies; the indicators of institutional development have significantly improved in some semi-periphery countries like the Czech Republic and Estonia, while they have very noticeably deteriorated in others like Croatia, Hungary, Latvia and Greece.

Since sustainable progress in economic development, especially regarding catching up with the leader countries, is not possible without a high level of institutional development and constant adjustment according to circumstances, overcoming the crisis reflected in the above figures may be an issue of existential significance for some semi-periphery countries in the upcoming period.

Education. Regarding the general duration of education of the people and using the world as a whole for the background, the countries of all four groups in the table can be considered countries with educated populations, yet there are noticeable differences between the groups. The difference between two groups of semi-periphery countries is conspicuous: while mean years of schooling in the CEE group vary generally between nine and 11, in the Southern group it varies between 11 and 13 years. The only countries to confuse the pattern are Croatia and Cyprus; the years of schooling in Cyprus are closer to the CEE group and those in Croatia are closer to the Southern group of semi-periphery countries.

Mean years of schooling of the top countries of the CEE group can actually rival that of such leader/core countries like the Netherlands, Japan and Sweden. However, the indicator of Germany, the US and Switzerland is higher still.

The mean years of schooling indicators of the group of breakthrough countries vary between 11 and 13 years, thus within the same range as the CEE indicators; the figure is slightly lower only in Singapore, but the gap is not too wide.

The duration of schooling of semi-periphery countries' residents is significantly longer than that of the periphery countries; this also applies to the states that, thanks to rapid economic growth, are either approaching the wealth level of semi-periphery countries or have already caught up with the semi-periphery league as to a number of indicators, e.g. India and China. Reaching the level of ten mean years of schooling is a major effort for countries rising from below; it is harder than preparing additional engineers, economists or other necessary specialists.

²³ The index of quality of institutions worked out by the World Economic Forum consists of 21 parameters including not only the components concerning the components with an intermediate impact on the business environment, such as property rights, quality of governmental regulations, etc., but also the same general parameters such as public trust in politicians, efficiency of government spending, and the reliability of police services.

In most of the Southern semi-periphery countries of Europe the length of schooling of the population lags behind not only the indicators typical of the core countries but also the breakthrough countries. This may become a potential bottleneck if these countries should try to climb to the core economies' level in the future. It is not the case for CEE group states.

While the medial length of the population's schooling is an indicator showing the existence of a broad base for improving the state's position in the international economy, the situation of the "higher end" of the population's educational structure is shown more precisely by the share of labour of people with bachelor's, master's and doctor's degrees. The importance of this indicator keeps increasing as the economy develops from straightforward production to more complex, innovation-based production.

As for the share of people with higher education, the two groups of semi-periphery countries under observation form a relatively homogeneous body—24–32% of residents in the age of 25–64 years have at least a bachelor's degree (or comparable degree). This is a very high ratio when compared with the entire world, not only with the periphery countries but also with the non-European semi-periphery countries. The top of the CEE group (Estonia, Latvia, Poland) display an indicator of roughly 30%, yet some countries of the same sub-group display approximately 23–25%, and in the Southern group states it remains between the two aforementioned figures. Regarding this indicator, the best of the semi-periphery countries observed ranks equal to some breakthrough countries and even some leader states.²⁴ However, the share of people with university education is still higher (40% or more) among the leader countries the UK, Japan and the US and among the breakthrough countries of South Korea and Israel.

The ratings of the quality of the education system regarding its adequacy to the requirements of economy are extremely variable, but generally tend to be critical/negative. This especially applies to the CEE countries. While this adequacy is judged as relatively good in Estonia, satisfactory in the Czech Republic, Malta and Portugal, a number of states like Slovakia, Croatia, Hungary and Greece are very critical in their judgments. Background: the leader and breakthrough countries generally rate the education system's quality from the economy's viewpoint as good (Switzerland, the US, Singapore, Finland have higher ratings), while Japan is somewhat more critical.

Discussions about reconciling the economy's needs and the education system, especially in the CEE countries, frequently hear the counterargument to accusations that the education system no longer meets the needs of the economy and that youth study "unnecessary" specialties—this mismatch has been caused by the economic policy resulting in an excessively primitive economic structure of the state, incapable of offering youth sufficiently attractive and lucrative jobs.

Semi-periphery economies from the viewpoint of openness to the world economy

All the countries on the table are members of the WTO, which by itself should ensure a certain compliance with the rules of an open economy. Viewing the actual role of international trade and international investments in the economies of these countries obviously reveals differences between the states²⁵ but in principle they all can be described as countries that have staked on surviving/succeeding in the global economy and exports.

²⁴ Germany pays great attention to applied technical education; accordingly the share of university education among the population is lower than in other leader states.

²⁵ It is a statistical regularity that the share of exports in the economy is significantly lower in large countries with large domestic markets compared with small countries. The producers in small countries are often forced to turn to exports since the domestic market lacks consumers for larger-scale production.

The share of exports in the economy

Among the semi-periphery economies, the CEE group forms a homogeneous block in that respect. Regarding the share of exports in GDP, only Croatia and Poland stand out in the predominant pattern (exports amount to 60–90% of GDP, a very high indicator internationally) with their lower figures, while in Poland's case it can be partially explained with the greater volume of the domestic market thanks to the larger population. (Compared with other large countries, the share of Poland's exports of GDP—53%—is not actually low, it is significantly higher than that of, e.g. Spain.)

The Southern semi-periphery group is also quite homogeneous in that respect, but if we omit the small island state of Malta, which is peculiar in several aspects, the predominant range of export share in this group is significantly lower than that of the CEE group and remains between 33% and 63%. Against the EU countries' background this could be considered a more or less average share of exports (the EU countries' average in 2017 was 45%). Considering that these are EU member states and a clear majority of members' trade occurs with other EU countries, this statistic also clearly indicates that although the CEE countries entered the EU integration processes later than the cohesion countries, by now they have been integrated into the EU economic space more closely than the aforementioned group, at least as far as the ratio of export volume and GDP volume goes. It is another matter, however, how profitably the countries of either group have entered the international value chains. This subject will be addressed in the following parts of the article.

To provide some background, let us view the significance of exports in the countries of the leader group and the “breakthrough group”. The US and Japan stand out among the leaders as to their lower share of exports in GDP, but here we have to keep in mind that these are very large economies and their share of exports in the range of 10–20% means very large export volumes of great significance for the world economy. It is true that both of these leader countries have lost a noticeable share of the world market to the new emerging power of China in recent decades.

A more complicated issue, especially when considered within the paradigm developed by Wallerstein, is whether the core economies of the contemporary world, especially world powers enjoying the status of core economies, are actually striving to seize the position of a dominant export leader similarly to what Great Britain once used to occupy. After all, there are other and better methods of domination, primarily the control of capital flow. Another aspect of the problem is that the regulation of complex domestic economic processes is becoming increasingly complicated in large countries with highly developed economies and for that reason the issues of goods and services exports will shift to lower positions in economic policies.

Statistics concerning the group of countries we designate as breakthrough countries provides a clear indication of the importance of export success in rising from semi-periphery countries to core countries. With the exception of Israel, in which case the realisation of export orientation is obstructed by clearly geopolitical factors, i.e. a hostile political environment, all the countries viewed in this group are very strong exporters, in past decades as well as currently. The economic structure of Singapore and Ireland is especially clearly export-oriented; the share of exports in these countries is much higher than in the strongest exporters of the CEE region. However, when using the breakthrough countries as role models for the present semi-periphery countries, we face the question of how likely the mobilisation of the population and the state is as a whole for achieving export success in the present-day world, which operates under different ideologies. The earlier success stories were achieved by using strongly corporate and, compared with today, more state-centred mechanisms (coordinated capitalism versus liberal capitalism); this applies to European states as well (Ireland, Finland).

The economic policy of the PRC has paid more attention in recent years to supporting domestic development and avoiding disproportions, but we certainly cannot argue that China's position on the world market has deteriorated due to it. The approximately 20% share of exports in GDP means, considering the size of the country, a clear leader's position in world exports.

Foreign direct investments (FDI)

When comparing the significance of the FDI stock in the economies of different countries, we can notice considerable differences. Among the semi-periphery countries, Estonia, the Czech Republic and Hungary stand out in the CEE group with a higher share of FDI, while Cyprus displays ultra-high FDI stock, hinting at a completely different economic model, in the Southern group of the semi-periphery. Their opposites are countries with a low significance of FDI—Slovenia, Lithuania and especially Greece and Malta. Among the remaining nine countries the share of FDI stock of GDP remains in the range of 45–67%; this span, which could be considered mainstream in the EU semi-periphery countries, is significantly higher than the EU average, which remains slightly below 40%. While in the case of Greece the low level could be partly considered a side effect of the complicated post-economic crisis situation, and the other divergences from the aforementioned mainstream zone can only be caused by deliberate economic policies with their different emphases.

An analysis of inward FDI does not suffice an explanation of the countries' role in the world economy, and the ratio of inward and outward FDI is highly important as well. The situation is relatively similar in the CEE countries with the volume of outward FDI being significantly lower than that of inward FDI; in some countries like Slovakia, Poland and Latvia, it is more or less a magnitude lower. The long-term persistence of this proportion testifies to a country's peripheral position in the international economy. This proportion is slightly better in Estonia, but outward FDI here is still less than one-third of inward FDI.

Inward and outward FDIs are better balanced in the Southern group of semi-periphery countries. They are more or less balanced in Spain and Cyprus, and in Portugal and Greece the incoming FDI stock is higher than that of the outward investments, but the former exceeds the latter by about two times rather than by an order of magnitude. Malta is a special case with a very small number of inward FDIs.

Further opportunities for understanding the subject can be found in an analysis of expert opinions carried out by the World Economic Forum, where experts of given countries were asked how their inward FDIs contributed to improving the sophistication and competitiveness of their respective countries' economies. The differences of opinion were quite telling. While the interviewed experts from Slovakia, Portugal, and to a slightly lower extent from Lithuania and Spain tended to agree with the statement, the experts from Croatia, Slovenia, Latvia, Greece and Cyprus expressed a rather resolute opposite opinion. When comparing the replies to the question in 2007 and in 2017,²⁶ a rather general negative dynamic becomes apparent among the CEE countries. Estimates had become significantly more positive only in two countries, Lithuania and Poland, out of eight (the experts of the Czech Republic were not asked this question in 2007). The opinions had become significantly more negative in Estonia, Slovakia, Hungary and Latvia. They had turned very slightly more positive in Croatia yet remained in the highly negative zone. The negative dynamic of opinions in Estonia and Hungary in particular is a sign of danger. The share of inward FDIs has been very high in these countries for a long time, they had been considered testing grounds for this model of FDI-based development, and the opinions and expectations concerning FDIs in the modernisation of the economy had been highly positive ten years ago. If we believe the experts we have to conclude that the development model heavily relying on FDIs had serious flaws.

Relation between the quality of basic premises and the dynamic of economic development rankings

In the following we shall look at whether we can observe some connections between improving the economic positions and such premises of economic development such as educational level indicators and the quality of the institutional environment.

Education. We had the hypothesis that since the education indicators in the Southern group countries varied highly as per country, one could presume considerable variation in these countries' economic performance as well. The hypothesis was only partially confirmed. Malta and Cyprus can boast the best education indicators of this group. Malta was indeed one of

²⁶ This is possible only in case of some countries under observation.

the countries that had improved their economic position within the past decade, while that of Cyprus had remained roughly the same. But Portugal, Spain and Greece with lower education indicators had also yielded ground in economic development indicators.

In general, education indicators should not become bottlenecks in making economic progress in the CEE countries group; the problem may instead lie in education system features and economic requirements being better matched. However, it can be observed here that Croatia and Hungary, which report lower education indicators than the others, have also lost their positions in the economic wealth rankings.

Institutions. Two facts should be underscored. First: the positions of all semi-periphery countries under observation with the exception of Estonia and Malta in the institutional environment quality rankings are much lower than those in the economic wealth ranking; in some cases the gap is very wide. Secondly: more than half of the countries under observation have experienced a decline of the institutional environment ranking in the past decade. The exceptions are only the Czech Republic and Estonia with a positive shift, and Poland and Malta with no negative or positive trend. All that should indicate that the semi-periphery countries still have a lot to do to prevent the institutional environment from obstructing economic development. Yet there is no reason to presume that the quality of the institutional environment or positive dynamic in that respect would necessarily ensure rapid economic progress. A clearly determined positive connection between these indicators could be observed only in a very limited number of cases (Czech Republic, Malta). A positive example from the institutional viewpoint is Estonia with its best index of institutional environment quality among the semi-periphery countries, which kept improving within the past ten years, yet the country was nevertheless incapable of advancing its position in the ranking based on per capita GDP.

Relation between the type of participation in the international economy and the dynamic of economic development rankings

As we already described earlier, all the semi-periphery countries under observation are in fact export-oriented to a lesser or greater degree—the CEE countries, however, more so than the countries of the Southern group. The share of exports did not increase or decline very significantly during the hard times of the observation period. Since this period, especially the years of the global crisis, were unfavourable for exports, it granted at least a theoretical advantage to countries with a large domestic market. It is possible that this effect helped Poland, but judging by the end results, probably not Spain.

The countries under observation differed significantly as to the share of FDI stock in GDP. It is not possible to claim that CEE countries with a higher or somewhat lower share of FDI were more successful in the past decade. Among the high FDI-share countries, the Czech Republic improved its position while that of Hungary and Croatia deteriorated and that of Estonia remained unchanged. Slovenia with its low share of FDI was clearly unsuccessful during this period. Among the countries of the Southern group, Cyprus and Malta with their high share of FDI were more successful than others.

When analysing the opinions of the countries' expert groups on whether or not FDI contributes to the development of the technological development of a country's economy, we can see a clearly negative shift in estimates in the CEE countries. The opinions have become more negative in all countries with the exception of Poland and Lithuania where the share of FDI is the CEE group's average. A different tendency is apparent in the Southern group of the semi-periphery countries. The corresponding opinions have become positive in all countries of the group except for crisis-stricken Greece.

A majority of the CEE group countries display a characteristic combination of high export-orientation and a high share of inward FDI, while the positions of outward FDI are weak in this group. In such a situation the critically important question is whether or not the country's enterprises can acquire functions in the international value chains that would grant them opportunities to earn adequate income and develop.

In practically all semi-periphery countries under observation, their weakness is the position in the international value chains and controlling them. With the exception of the Spanish experts' judgment on value chain breadth in their country, we find in no country in either group of semi-periphery countries an expert group opinion of value chain breadth or control of international distribution, which would be even slightly above average against the background of the global evaluation panel (among the 30 top ratings given by different countries' expert groups when answering these questions and evaluating their countries' situation). Low positions in value chains almost automatically result in specialisation in predominantly those products and services where the competitive advantage is the low-cost input rather than more sophisticated and high-quality products and services and where the production processes are simple rather than complex.

Compared with the enterprises of the Southern group countries the positions of the CEE countries in value chains are weaker and the dynamic in that sphere is more negative. Regarding value chain breadth the positions of all CEE countries have deteriorated if we can rely on the experts' opinions. The dynamic of most countries of this group in control of marketing channels is also negative in this decade, although with some exceptions (incl. the Czech Republic). Among the Southern group countries, all except Greece are judged to be currently in a better state regarding acquiring wider functions in value chains than they used to be ten years ago.

The position in value chains is also closely related to the opportunity to develop and realise the innovation capability of the economy. The indices characterising the innovation capability of economies of the members of both groups are not too high either, yet the overall picture is not fully negative. The innovation index of several CEE countries (Estonia, and to a smaller extent Slovenia and the Czech Republic), and among the Southern group countries, Portugal is quite respectable when compared with countries of a similar wealth level, yet this rather high innovation capability cannot be realised in the economic outcomes, probably due to the low positions in the international value chains.

The innovativeness rankings of the Southern group's countries are in all cases lower than the rankings of wealth.

Can the competitiveness index predict the growth of economic wealth?

It could be logically presumed that states with a higher competitiveness index at the beginning of the period would improve their ranking in the per capita GDP rankings by the end of the period, i.e. the competitiveness index should permit forecasting the changes in the states' wealth rankings. Do the developments in the semi-periphery countries in the last decade confirm this hypothesis?

In the beginning we look at the state and dynamics of country groups and countries as to the per capita GDP indicator and competitiveness index.

At the beginning of the period under observation, in 2006, the per capita GDP rankings of the semi-periphery countries under observation extended from 26th place (Spain) to 54th (Croatia). The Southern and CEE semi-periphery groups differed very clearly—the former was much wealthier than the latter. The sole exception was the wealthiest member of the CEE group at that time, Slovenia—its per capita GDP surpassed the bottom members of the Southern group, Malta and Portugal.

The divergence of the semi-periphery economies in the world ranking based on competitiveness indices (2007) was even minimally larger, ranking between 25th (Estonia) and 51st (again Croatia); however, this indicator does not enable differentiation between two distinct sub-groups of semi-periphery countries. The competitiveness indicators of the CEE group countries, although their divergence is quite high within the sub-group, tend to be even better than those of the Southern group. The positions of most CEE countries in the competitiveness rankings are better than their places in rankings based on per capita GDP levels. The competitiveness of the Czech Republic is only one notch below Spain, the best performer of the Southern group. The lowest competitive indices in the Southern group countries are those of Greece and Cyprus, and in the CEE group of Croatia and Slovakia.

When studying the 2017 rankings of economic wealth we can see only minimum blending among the Southern and CEE groups during the ten-year period. All CEE countries with the exception of Croatia have surpassed crisis-struck Greece, and the Czech Republic with its highest per capita GDP level among the CEE countries has also left Portugal behind. Slovenia, too, despite its not too successful development, ended the period at a per capita GDP level slightly above that of Portugal. However, on the whole the Southern group has remained somewhat wealthier than the CEE group.

Within the CEE group, the Czech Republic, Slovakia and Lithuania have significantly improved their positions in the global per capita GDP rankings, and the positions of Slovenia and Hungary have noticeably deteriorated, while the others have retained their previous positions or have undergone only minimal changes, 1–2 notches. Portugal and Malta have improved their positions in the Southern group, and Spain and especially Greece have fallen, while Cyprus has approximately maintained its previous ranking.

When viewing the European semi-periphery group as a whole, we notice that its internal divergence has remained more or less unchanged; the per capita GDP positions of the countries within the group now spread between 33rd and 54th places. The whole span of the global ranking where the semi-periphery countries are located as to their economic wealth has shifted downward; the current position of the wealthiest country (Malta) in the ranking is lower than that of the former wealthiest country (Spain) while the position of the lowest-wealth country has dropped as well (Croatia in 2006 and 2017). In other words, from the global viewpoint Europe's semi-periphery has rather shown retrograde dynamics during the decade.

We witness even worse dynamics when looking at the competitiveness rankings. While the best performer of Europe's semi-periphery (Spain) occupied 20th place in the global ranking of this indicator in 2007, the present best (the Czech Republic) ranks 25th. While the weakest performer (Croatia) held 51st place in 2007, the current country of lowest competitiveness (Greece) ranks 54th. The length of the span in the global ranking where these countries are located according to this indicator has actually shrunk, but the span itself has shifted downward.

The rankings of all Southern group members according to competitiveness are currently worse than the rankings based on economic wealth and leave little hope for a leap in their economies during the upcoming period. The position of the top of the CEE group (the Czech Republic, Estonia) in the global competitiveness ranking is better than in the economic wealth ranking, although the difference in case of the Czech Republic is a couple of notches.

How strong then was the connection between the competitiveness index as the premise and the economic growth as the result?

We have to admit that the predictions based on the competitiveness index were only partially realised. Within the CEE countries' group this index allowed for the rise of the Czech Republic in the economic wealth ranking and the decline of Hungary and Croatia to be predicted, which all took place, yet it would have been impossible to foresee the slowing of Estonia's progress or the rise of Slovakia and Lithuania according to their positions in the 2007 competitiveness index.

As for the Southern group, the weak positions in the competitiveness index signalled the upcoming hard times for Greece and Cyprus. In reality Greece indeed dropped, yet the per capita GDP position of Cyprus remained practically unchanged. The index could have predicted the improvement of the economic positions of Spain and Portugal. In reality, however, Malta showed the best improvement of economic position while Spain's position deteriorated significantly.

The issue of the usability of the competitiveness index in forecasting needs more detailed analysis that would also study the more precise dynamic of the index, determine the length of the time lag between the changes of its individual components and the impact on real economy, etc., but based on the analysis presented here we can argue that the predictability of the competitiveness index has been rather limited, at least so far. Accordingly, some factors either absent from the makeup of the **WEF competitiveness index or underrepresented there do not allow the internationally quite high competitiveness index of some countries under observation to be realised in economic growth, in other words, they enable the semi-periphery countries to catch up with the core countries.** Proceeding from Wallerstein's theory, these factors could be sought among the indicators reflecting the connections of the semi-periphery countries with the hierarchically arranged world economic system.

General conclusions (Does the semi-periphery persist in Europe and how is it doing?)

Summation of the results of the empirical analysis and their comparison with the existing theoretical background allows for reaching the following basic conclusions:

a) Conclusions about core-periphery relations in general (global picture)

- Based on the developments of the past ten years one can argue that the division into the periphery, the semi-periphery and the core is predominantly persistent. One can observe a certain weakening of the positions of the dominant core (leader) economies during the past ten years, but this can mainly be explained by two reasons. First, a number of countries specialising in the production of oil and gas have risen among the world's wealthiest economies. These countries' other development premises for maintaining their positions long-term are not high. Secondly, the People's Republic of China has begun to play a significantly larger role in the world economy, having reinforced its positions in exports and the financing of international economics while attempting to have greater say in global politics. China's several premises give reason to believe that the growth of its economy and the strengthening of its positions may continue, despite recently slowing down. Yet China has only reached/is reaching the world average level as to the per capita wealth indicators, while its several other development indicators correspond more to those of the bottom half of semi-periphery countries (e.g. mean years of schooling indicator).
- Out of the group of countries this study describes as breakthrough countries of an earlier period, i.e. striving from among semi-periphery to core economies, two, namely Singapore and the Republic of Ireland, have established themselves as some of the wealthiest states in the world. Their development indicators are more uneven than those of the old core countries yet by now they can be considered as definite core economies. However, both are relatively small countries/economies, and therefore their addition does not significantly change the general geo-economic picture.
- It is telling that as to the competitiveness index all seven leading core economy countries studied in the analysis maintained their position among the world's top ten throughout the observation period. Holding the key position of the core economies is supported by a favourable position in the global value chains and control over them, very high technological development and high innovation capability of the economy, as well as indicators characterising very high education standards. However, some signals of drawbacks are sent by the level of the institutional development index, which is in the countries of this group at the world top 20 level, rather than among the top 10.

b) Empirical conclusions about the semi-periphery group of countries

- When judging according to GDP dynamics or competitiveness index changes, the general difference between the two groups of Europe-based semi-periphery countries, the CEE countries and the Southern group, has not significantly increased, and neither has there been any considerable mixing of the two. The top performers of the CEE group have passed the weakest of the Southern group, yet this is no reason to claim that the CEE group has been more successful; the Southern group as a whole is more even, with Greece being the sole exception. Both groups have their laggards and leaders (Greece and Croatia as the laggards and the Czech Republic and Malta as the top performers). **It can be stated, however, that the European semi-periphery group has generally maintained in the past decade its homogeneity when compared with other groups of countries like the core countries, breakthrough countries and periphery countries.**
- The greatest weaknesses in practically all semi-periphery countries are unfavourable positioning in the international value chains and controlling them. Low positions in value chains almost automatically results in specialisation in predominantly those products and services where the competitive advantage is the cheap input rather than more sophisticated and high-quality products and services and where the production processes are simple rather than complex. The situations of semi-periphery and core economies are totally different in that respect.

The indices characterising the innovation capability of economies in several countries under observation (especially Estonia, as well as Slovenia and the Czech Republic and Portugal) are quite respectable when compared with countries of similar

wealth levels, yet the innovation capability cannot be realised in the economic outcomes due to the low positions in the international value chains.

The weak position in the value chains is apparently one of the reasons why the positions of the semi-periphery countries viewed as a whole have deteriorated rather than improved in global rankings. The CEE countries especially have placed high stakes on exports, but figuratively speaking they have been trapped as producers in unpromising links of value chains.²⁷

- It can be stated in general that the specific features of semi-periphery countries, despite the aforementioned differences, exists nevertheless and therefore it makes sense to continue using the category of semi-periphery and analyses based on it. There is currently no ground allowing for forecasting whether the polarisation in the world economy into periphery and core economies will continue or even increase and the emergence of the semi-periphery will remain somewhat anomalous or whether a stronger emergence of the semi-periphery would occur. The world has seen in the past two or three decades cases of some countries, although not large economies, having moved from the semi-periphery to the core; one very large country, China, has recently moved on from the periphery to the semi-periphery and is continuing its progress. The latter process may turn into a geo-economic game-changer. However, **the analysis of European developments taking place during the past ten years does not provide for optimism about a European semi-periphery country being able to make it to the “top league” within the predictable future.**

Some theoretical conclusions

- Wallerstein's World Systems Theory, which proceeds from the postulate of an inert hierarchic structure, claims that when ascending from one hierarchic “layer of economy” to another, the higher one is extremely difficult, while an opposing hypothesis based on the “catching-up” mindset postulates that the economies' development gaps will inevitably shrink in “normal conditions” under an international free market and that economies will conform. Actual developments can provide evidence to support either theory, and therefore it should be practical to carry on with both hypotheses, asking in either case what the factors are due to which the theoretical premises under observation are not realised or are realised very slowly. When testing the catching-up-type logic, we can ask which factors inhibiting mechanisms operated to obstruct the convergence and how we could make the theory more adequate by including these mechanisms in it. We could also act the opposite way and start from the concept that moving from one layer to a higher one is practically impossible for certain reasons. Having witnessed that some countries have succeeded in it, we have to substantiate this aberration from the hypothesis of the closedness of layers, to show the limitations of the closedness hypothesis. In either case the initial theoretical platform is modified towards greater realism. It cannot be ruled out that this will eventually lead to the formulation of a new synthetic platform.
- The catching-up mindset in its purest form, which argues that all it takes to catch up with the advanced economies is the implementation of free market policies and elementary institutions for ensuring order, is a huge and not-too-credible simplification. The more or less mainstream mindset is represented by the theory that an economic system passes through various stages in its development, and moving from one stage to another requires additional reorganisation efforts, including state support. As Michael Porter argues, in order to transit from the less sophisticated, efficiency-driven stage of development to innovation-based development, a knowledge economy, certain rearrangement of the

²⁷ The outcomes correspond quite well to somewhat pessimistic conclusions recently reached by Roman Stöllinger (Stöllinger R., 2018. Change in Functional Specialisation Patterns: Key to Escaping the Semi-Periphery Trap WIIW Spring Seminar, 12 April 2018), namely that Europe's semi-periphery countries have quite closely integrated into the European production networks but they are highly dependent on foreign firms. The hierarchical relationship between the countries of the core and periphery persists. The number of global players among semi-periphery countries is minuscule. This results in the CEE countries being trapped in low value creation and in the semi-periphery. At the presently functioning specialisation pattern the catching-up process is obstructed and these countries no longer have opportunities to break through into the core.

education system, state-supported innovation policies and other measures are necessary. This can essentially be seen as modernisation and further development of the catching-up mindset. In other words: it is sufficient for succeeding if you adapt to the international market, but will develop more sophisticated institutions and carry out an amplified innovation policy. The expert opinions organised by the World Economic Forum and the regular Global Competitiveness Reports have been based on such a mindset. The introduction of Michael Porter's logic of stages²⁸ is unquestionably an important step ahead, but it also seems that the logic of this analysis has still underestimated the difficulties related to achieving a better position in international value chains. The analysis provided in this article shows as well that the countries whose (key) enterprises do not control these chains as a rule cannot find activities there that would enable higher productivity. The established international value chains are some the most rigid elements among the factors limiting opportunities for economic development. Therefore the theories based on hierarchic structure of the economic system, including that of Wallerstein, add the necessary elements of realism in concepts of developmental economics. Using the category of semi-periphery economies has an important place in such reasoning.

²⁸ Porter M.E., 1990. *The Competitive Advantage of Nations*. New York: The Free Press and Macmillan Press, 1990.

Table 1. Statistics for testing the homogeneity of the European economic semi-periphery.

	Nature of competitive advantage (estimation, ranking), 2006 and 2017	Value chain breath (estimation, ranking), 2006 and 2017	Control of international distribution (estimation, ranking), 2006 and 2017	State of cluster development (estimation, ranking), 2006 and 2017	Production process sophistication (estimation, ranking), 2006 and 2017	Innovation index (ranking), 2006 and 2017	Inward FDI stock compared to GDP (2017)	Proportion between inward and outward FDI stock (end of 2017)	Estimation of the positive role of inward FDI (rankings), 2006 and 2017	Export of goods and services from GDP, 2017	Mean years of schooling (UNESCO, 2015 or 2016)	Quality of education system (from economic aspect, estimation, ranking)	25-64 years old with tertiary education (short-cycle tertiary excluded), 2015 or 2016	Quality of institution from the viewpoint of economy (ranking), 2006 and 2017	Competitiveness index, 2017 (ranking)	Dynamics of competitiveness index between 2006 and 2017	GDP per cap (PPP) 2006 (thous. of USD and ranking)	GDP per cap (PPP) 2017 (thous. of USD and ranking)
Czech Rep.	53 from 27 to 42	52 from 27 to 42	from 91 to 37	52 from 23 to 31	from 28 to 36	72% Inward 6.5 times higher	from 10 to 30	79.5% 12.7 years	59	24%	from 60 to 52	31	minus 2	22.0/36	36.9/34			
Slovenia	from 29 to 36	77 from 21 to 62	from 35 to 41	33	from 34 to 35	34% Inward 2.3 times higher	from 108 to 83	82.2% 12.3 years	from 52 to 52	23%	from 43 to 56	48	minus 15	23.4/33	34.8/35			
Slovakia	from 90 to 75	57 from 35 to 52	from 85 to 75	from 54 to 30	from 42 to 67	58% Inward 16 times higher	from 5 to 16	96.3% about 13 years	118	22%	from 53 to 93	59	minus 21	18.4/42	32.1/38			
Estonia	from 61 to 54	from 36 to 54	from 56 to 59	73 from 36 to 52	from 30 to 30	90% Inward 2.7 times higher	from 8 to 43	78.0% about 13 years	23	32%	from 30 to 24	29	minus 4	20.3/39	31.6/40			
Lithuania	from 33 to 65	from 25 to 49	from 31 to 40	94 from 35 to 42	from 50 to 41	38% Inward 3.4 times higher	from 94 to 32	81.3% 13.2 years	73	40%	from 59 to 92	41	minus 1	15.3/45	32.1/39			
Poland	from 38 to 100	from 39 to 64	from 75 to 61	64 from 44 to 49	from 44 to 59	46% Inward 8.5 times higher	from 88 to 37	53.4% 12.3 years	72	30%	from 73 to 72	39	plus 9	14.4/47	293/44			
Hungary	from 44 to 59	from 26 to 98	from 92 to 66	90 from 39 to 84	from 31 to 62	67% Inward 3.1 times higher	from 16 to 48	90.1% 11.9 years	111	23%	from 46 to 101	60	minus 19	17.5/43	28.3/46			
Latvia	71 from 43 to 53	from 43 to 53	from 59 to 50	98 from 66 to 83	54	58% Inward 9 times higher	from 51 to 80	60.5% about 13 years	from 35 to 68	31%	from 50 to 82	54	minus 18	16.0/44	27.6/49			
Croatia	from 39 to 60	from 59 to 76	from 58 to 70	120 from 61 to 74	106	43.00% Inward 4.5 times higher	from 106 to 111	51.3% 11.3 years	112	?	from 66 to 102	74	minus 13	13.4/51	25.3/54			
Portugal	44 from 34 to 33	from 48 to 57	from 48 to 57	39 from 48 to 57	36	60% Inward 2.5 times higher	from 33 to 15	43.10% 9.2 years	32	25%	from 34 to 43	42	minus 12	19.0/41	32.2/37			
Spain	37 from 42 to 25	from 42 to 25	from 42 to 31	36 from 42 to 31	32	46% Inward 1.1 times higher	from 39 to 31	34.10% 9.8 years	67	25%	from 25 to 54	34	minus 8	27.4/26	38.1/33			
Greece	48 from 48 to 72	from 48 to 72	from 57 to 58	121 from 57 to 58	58	15% Inward 1.7 times higher	112	33.20% 10.3 years	106	29%	from 40 to 87	87	minus 40	24.0/32	27.9/48			
Cyprus	38 from 43 to 40	from 43 to 40	from 34 to 65	82 from 34 to 65	59	53 About 700%	from 93 to 79	63.80% 12.1 years	55	?	from 37 to 51	64	minus 18	23.0/35	34.5/36			
Malta	29 from 53 to 32	from 53 to 32	from 53 to 54	34 from 53 to 54	29	About 2%	from 18 to 17	140.00% 11.3 years	19	?	from 39 to 38	37	plus 2	21.3/38	39.5/30			
Core economies:																		
US	15 from 6 to 1	4 from 6 to 1	1 from 6 to 1	9 from 6 to 1	2 from 6 to 1	40% equal	5	11.9% 13.4 years	4	35%	20	2		43.8/6	59.5/11			
Germany	11 from 7 to 6	7 from 7 to 6	2 from 7 to 6	4 from 7 to 6	5 from 7 to 6	26% Outward 1.7 times higher	11	47.2% 14.1 years	9	27%	21	5		31.9/20	50.7/16			
UK	9 from 8 to 7	6 from 8 to 7	8 from 8 to 7	6 from 8 to 7	12 from 8 to 7	69% equal	7	30.5% 13.2 years	22	36%	12	8		31.8/21	43.9/24			
Netherlands	6 from 8 to 4	8 from 8 to 4	4 from 8 to 4	5 from 8 to 4	4 from 8 to 4	200% Outward 1.5 times higher	9	86.5% 12.2 years	7	34%		5		32.1/19	52.9/14			
Switzerland	1 from 3 to 6	3 from 3 to 6	6 from 3 to 6	12 from 3 to 6	1 from 3 to 6	147% Outward 1.1 times higher	12	65.00% 13-14 years	1	31%	12	1		34.0/13	65.0/8			
Sweden	7 from 5 to 3	5 from 5 to 3	3 from 5 to 3	16 from 5 to 3	5 from 5 to 3	60% Outward 1.1 times higher	14	45.3% 12.4 years	20	32%	11	7		33.2/18	50.1/18			
Japan	2 from 1 to 5	1 from 1 to 5	5 from 1 to 5	11 from 1 to 5	2 from 1 to 5	4% Outward 7.7 times higher	25	16% 12.8 years	36	more than 39%	17	9		33.1/16	43.9/25			
Breakthrough economies:																		
Finland	14 from 19 to 20	19 from 19 to 20	11 from 19 to 20	17 from 19 to 20	6 from 19 to 20	35% Outward 1.4 times higher	42	38.6% 12.4 years	3	31%	1	10		45.2/23				
Ireland	19 from 4 to 16	20 from 4 to 16	26 from 4 to 16	20 from 4 to 16	14 from 4 to 16	270% equal	from 2 to 1	120.0% 11.3 years	7	30%	19	24		76.3/5				
Israel	4 from 17 to 25	16 from 17 to 25	14 from 17 to 25	32 from 17 to 25	15 from 17 to 25	37% Inward 1.3 times higher	6	30.5% 13.0 years	25	36%	29	16		38.4/31				
Singapore	17 from 20 to 22	14 from 20 to 22	25 from 20 to 22	10 from 20 to 22	16 from 20 to 22	369% Inward 1.8 times higher	from 1 to 2	173.00% 10.1 years	2	?	2	3		93.9/3				
Taiwan	20 from 23 to 29	21 from 23 to 29	39 from 23 to 29	2 from 23 to 29	21 from 23 to 29	14% Outward 4.3 times higher	from 28 to 35	Less than 70% about 11 years	31	?	30	15		about 49.8				
Korea	22 from 74 to 30	23 from 74 to 30	9 from 74 to 30	28 from 74 to 30	24 from 74 to 30	12% Outward 1.8 times higher	55	43.1% 12.1 years		more than 45%	58	26		38.3/32				
China	from 74 to 30	29 from 74 to 30	29 from 74 to 30	27 from 89 to 39	from 46 to 28	24% Inward 1.9 times higher	from 104 to 49	19.80% 7.8 years	29	?	from 46 to 41	27		16.8/76				

Sources: World Economic Reports, WB, US CIA Factbook, OECD, UN