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CENTRAL AND EASTERN EUROPEAN CITIES IN GLOBALIZED WORLD

Abstract. *The purpose of the study is to determine the position of major corporations located in the cities of Central and Eastern Europe. Analyzes are also dynamics of city's growth in relation to their international connectivities. Therefore, the study was conducted using data obtained from the Forbes Global 2000. For the largest companies analyzed data on revenues, profits, market value, asset value and divided by the sectors. The analyzes related to the years 2006 and 2012. The study uses an indicator of normalization index by which determined the ranking of cities where there is at least one headquarter of corporation mentioned on the Forbes Global 2000 list. The results show the highest position of the following cities: Tokyo, New York, London, Paris and Beijing. Asian cities characterized by the highest growth rate. In turn, the analysis of statistical data show weakening the position of cities located throughout the United States. In the case of the region Central and Eastern European cities located in this area present a relatively low value of the examined indicator; the only exception is Moscow, a relatively high located in the hierarchy. A positive feature of cities in the region, however, is the positive dynamics of their growth, which in perspective can make that more of them have a chance to join the ranks of major cities in the world.*

Keywords*: ranking, Forbes, Central and Eastern Europe, city.*

Introduction. The economic significance of cities and metropolitan areas has been increasing over the last several decades. Cities and metropolitan areas across the world are growing in terms of population and space occupied, and are becoming decision centers on the regional and world scale. Key decisions made in major urban centers today exert much more influence than their traditional administrative functions would suggest. Research now suggests that cities as decision

centers are strongly linked to the presence of the corporate headquarters of global companies (Kilar, 2009). According to Z. Zioło (2006), the modern age is an age of multinational companies characterized by a wealth of global assets. The importance of high-tech centers and public-private partnerships is also increasing, which helps lead to the development of new technologies. This process occurs mostly in large cities (Nahornyak H., Nahornyak I., Vovk Y. 2013).

The increasing importance of large corporations has led to the emergence of the concept of the global city (Hymer, 1972; Cohen, 1981) where multinational corporations play a key role. Research on the theory of the global city advanced further in the 1980s (Friedmann, Wolff, 1982; Friedmann, 1986; Sassen, 1988). Today it appears that the most important aspect of globalization is the mobility of capital as well as the reduction of the significance of physical distance in the area of capital flow and labor flow. Current economic development patterns suggest the gradual emergence of a global economic system as well as the growing power of global corporations and their mutual linkages (Sassen, 2000). The most important global cities today are (in descending order of importance): London, New York, Tokyo, Singapore, and Chicago (Sassen, 2011). These cities are considered "basing points" in geographic space and their primary task is to increase the potential of regional and national economies (Friedmann, 1995).

Researchers are interested not only in the functions of a city but also in its linkages with other cities across the world. A. Hall (1966) introduced the notion of a "world city," which is characterized by the presence of the headquarters of international organizations. In addition, a "world city" serves as a center of finance, commerce, services, culture, and entertainment on a world level. World cities are also largely responsible for the world's technological progress by hosting academic research centers and multinational research corporations (Dorocki, 2012). The world city concept was recently developed further by P.J. Taylor and coworkers as well as the Globalization and World Cities Research Network (www.lboro.ac.uk). The organization pursues research on linkages between cities. The first papers were published in the 1990s (Beaverstock, Smith, Taylor, 1999). More papers have been published on international linkages between cities in the last decade eg.: Taylor, 2003; Taylor, Aranya, 2008; Liu, Neal, Derudder, 2012; Liu, Derudder, Taylor 2014. According to data from the Globalization and World Cities Research Network, the cities with the largest number of linkages today are London, New York, Hong Kong, Paris, and Tokyo.

Many researchers believe that the presence of the headquarters of corporations is a sign of strength of a city (Alderson and Beckfield, 2004; Csomós, 2011; Liu and Derudder, 2012). G. Csomós (2013) introduced a new method of evaluating the command and control function of a city based on the financial data (revenue, profit, assets, market value) of the largest corporations present in the city. The end product is a Command Control Index for the largest cities in the world. In 2012 the highest index values were calculated for Tokyo, New York, London, Beijing, and Paris.

Company financial data available from Forbes Global 2000 indicate that the economic crisis is being felt more in Western Europe than in Eastern Europe. While there are fewer Forbes companies in the eastern part of Europe, these companies are producing markedly better results (revenue and profit) than their counterparts in the western part of Europe (Raźniak, Winiarczyk-Raźniak, 2014). The purpose of this paper is to discuss the global rank of the largest companies located in Eastern Europe as well as changes in standing relative to other key cities in the world.

The purpose of the paper is to describe the position of the largest corporations located in cities in Central and Eastern Europe in the context of the rest of the world as well as to describe rates of "corporation growth" of cities in the studied region relative to so-called world cities.

Data and methods. The world rank of a city may depend on the financial results of its largest corporations (Csomós, 2013). In addition, the diversification of the local economy may also strengthen a city's standing in the world. The presence of corporate headquarters may attract smaller companies to a city. Collaboration with large corporations is one reason to move to a given city. Furthermore, a diverse local economy may help soften an economic downturn whenever one occurs. When one or two sectors falter, other sectors continue to function fairly normally and help a city manage an economic crisis.

This paper provides a ranking of cities featuring at least one company from the Forbes Global 2000 list (www.forbes.com). The ranking is based on corporate revenue, profits, assets, and market value in the years 2006 and 2012. The financial data were aggregated at the city level for cities with at least one corporate headquarters. Next, the number of corporate headquarters per city was calculated (Csomós, Globalization and World Cities Research Network). The analysis also includes the number of sectors present in the local economy based on the classification used by Standard & Poor's: Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Telecommunication Services, and Utilities (Global Industry Classification Standard - GICS).

The potential of cities was evaluated using a normalization index (maximum values). Point values were calculated for each parameter for each studied city:

1. Point values for each city "*i*" for year "*y*":

g_{iy} – for the number of sectors in an economy (GICS) G_{iy}

h_{iy} – for the number of headquarters H_{iy}

r_{iy} – for revenue R_{iy}

p_{iy} – for profit P_{iy}

a_{iy} – for assets A_{iy}

mv_{iy} – for market value MV_{iy}

where:

$$g_{iy} = \frac{G_{iy}}{\max(G_{iy})} \times 100,$$

$$h_{iy} = \frac{H_{iy}}{\max(H_{iy})} \times 100,$$

$$r_{iy} = \frac{R_{iy}}{\max(R_{iy})} \times 100,$$

$$p_{iy} = \frac{P_{iy}}{\max(P_{iy})} \times 100,$$

$$a_{iy} = \frac{A_{iy}}{\max(A_{iy})} \times 100,$$

$$mv_{iy} = \frac{MV_{iy}}{\max(MV_{iy})} \times 100,$$

where $\max(G_{iy})$, $\max(H_{iy})$, $\max(R_{iy})$, $\max(P_{iy})$, $\max(A_{iy})$, $\max(MV_{iy})$ are maximum values of each given data type for a given city in a given year.

2. A partial index "*C*" was calculated for each city "*i*" for each year "*y*".

$$C_{iy} = g_{iy} + h_{iy} + r_{iy} + p_{iy} + a_{iy} + mv_{iy}$$

3. A comprehensive index was also calculated for each city "i" for each year "y".

$$S_{iy} = \frac{\sum_{1}^{n} \frac{G_{iy}}{\max(G_{iy})} + \frac{H_{iy}}{\max(H_{iy})} + \frac{R_{iy}}{\max(R_{iy})} + \frac{P_{iy}}{\max(P_{iy})} + \frac{A_{iy}}{\max(A_{iy})} + \frac{MV_{iy}}{\max(MV_{iy})}}{\max(C_{iy})} \times 10^4$$

4. The maximum value of each point index is 100. The partial index C_{iy} is a sum of point indexes for a given city "i" for a given year "y". Hence, its value depends on the number of data

types and may not exceed n*100, where "n" is the number of data types. In this particular scenario, the partial index C_{iy} can reach a value of 600 given that n = 6; six types of indexes, as in item no. 1.

5. The maximum value of the comprehensive index S_{iy} is 100 regardless of the number of data types included. This index is used to rank a city's place in the world in terms of its economic potential relative to that of other cities.

The Forbes Global List includes the 2,000 largest public companies in the world. The selection of metropolitan areas with the largest number of Forbes Global company headquarters may yield somewhat surprising results. For example, the small city of Lubin in western Poland (with 75,000 residents) was ranked 224th in 2012 (305th in 2006) thanks to the financial strength of KGHM Polska Miedź SA – a major mining company. The same holds true of smaller cities in Russia with one dominant company. For example, the cities of Cherepovets and Lipetsk are on the list thanks to large materials companies. Finally, it is important to remember that there is no ideal ranking system that would factor in all possible variables (Raźniak, 2014), and the rank of a city is closely linked with the selection of variables and methods of calculation (Markovych, 2013).

Central an Eastern Europe cities and the world. A total of 386 cities possessed the corporate headquarters of companies listed by Forbes Global 2000 in the year 2006. This number increased to 433 by the year 2012. This may be a sign that corporate headquarters are being established outside of traditional areas of concentration. In addition, the comprehensive index value for the studied cities increased relative to top ranked Tokyo in the period 2006 – 2012. This suggests that current globalization processes are manifested via the economic development of many cities relatively unknown on the world stage until recently or the migration of corporate headquarters to new hometowns.

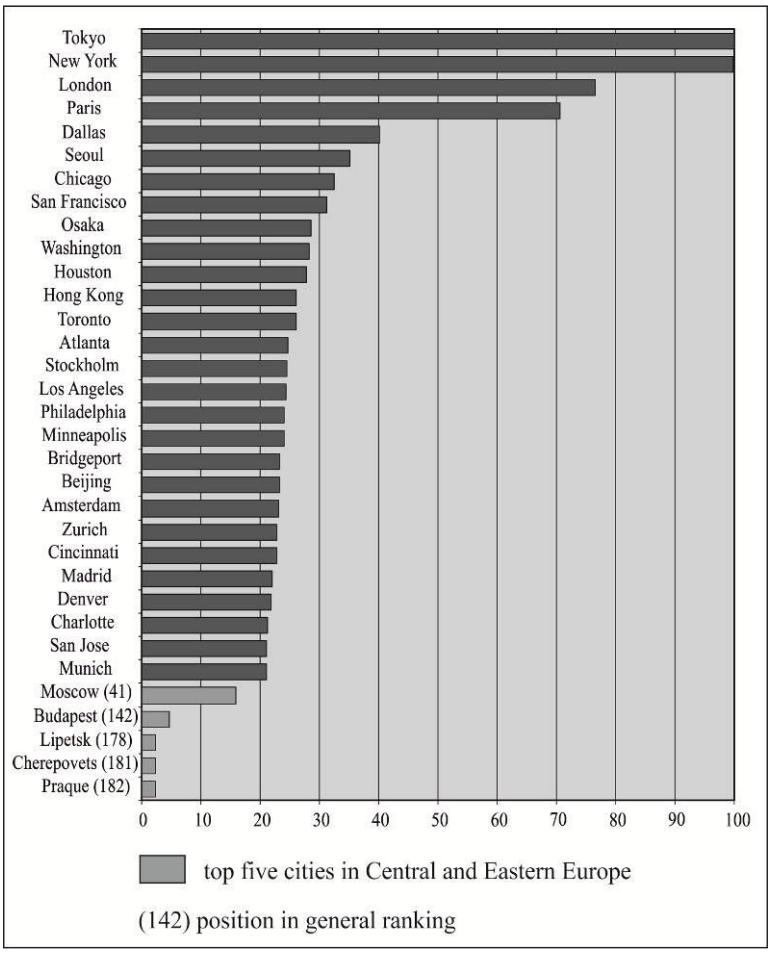

Fig. 1. The comprehensive index for cities in Central and Eastern Europe and the world in 2006

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network

In 2006 only three cities had an index value of more than 50% and included Tokyo, New York, London, and Paris, all of which are considered to be some of the most important global cities by many researchers (Hall, 1966; Friedmann, 1995; Sassen, 2000). Tokyo was assigned a comprehensive index value of 100.0 or the highest value possible (Fig. 1). New York was ranked at 99.80 points. The four cities were dominant in the world, with London and Paris ranked at 76.58 and 70.65 points, respectively. The fifth-ranked city, Dallas, was found more than 30 points away from London and Paris. It should be noted that first-ranked Tokyo was ranked fifth and sixth in terms of global linkages in 2004 and 2008, and was outranked by New York (no. 2) and London (no. 1) (GaWC Research Network).

Most Type 1 cities Most cities with a comprehensive index value over 20.0 (15) are located in the United States. In addition to New York, cities such as Dallas (40.13), Chicago (32.52), and San Francisco (31.20) were highly ranked in the world. On the other hand, the only city in Central and Eastern Europe to make the top city list was Moscow. Other cities in the region possessed little potential compared with first-ranked Tokyo. Only Budapest (4.45) ranked with the potential over 4.0. This indicates that cities in Central and Eastern Europe were not globally significant during the study period.

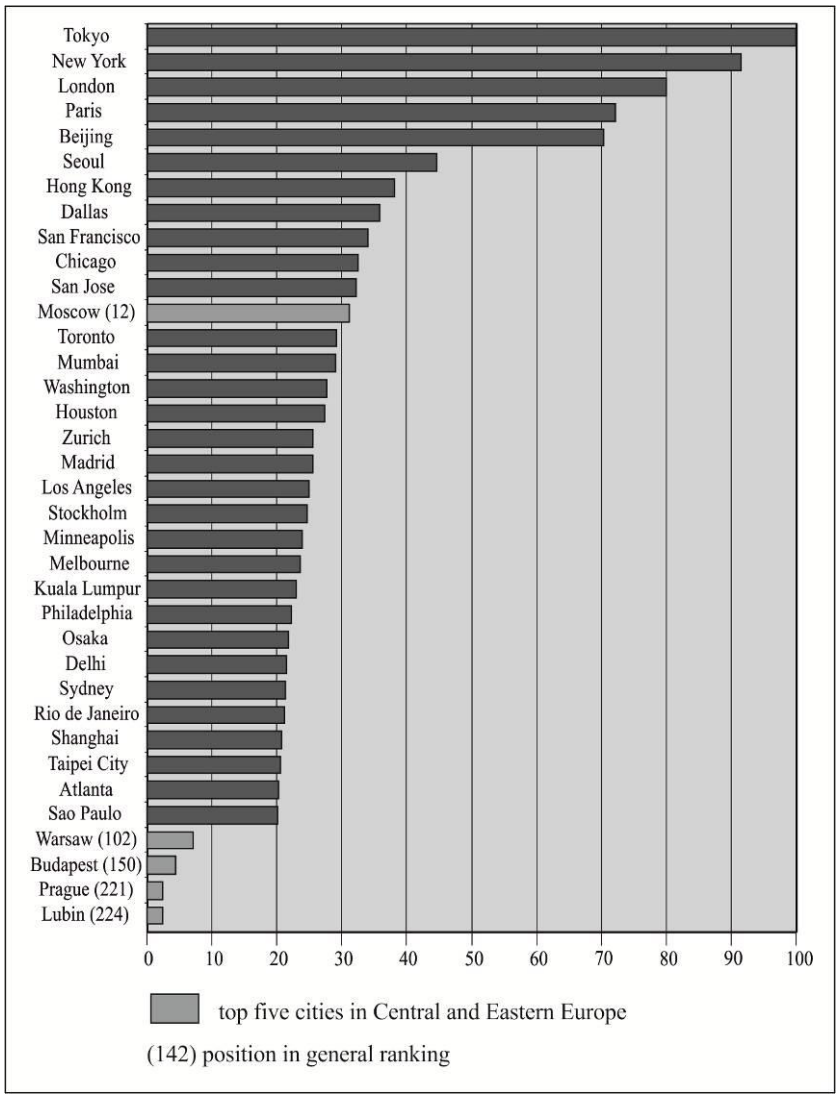

Fig. 2. The comprehensive index for cities in Central and Eastern Europe and the world in 2012

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network

Tokyo became the top ranked city in 2012, with New York as the second-ranked city (Fig. 2). In 2006 the two cities differed only by 0.2 index points, while in 2012 the difference was 8.54 points. This may suggest that the global economic crisis, which began in the United States in 2007 and spread to the European Union and other parts of the world by 2008 (Nowotnik, 2011), had a stronger impact on American cities than on Tokyo. One proof of this hypothesis may be the decline in the number of Type 1 cities in the United States between 2006 (15 cities) and 2012 (11 cities) the decreasing number of cities with the highest potential (over 20.0) from 15 in 2006 to 11 in 2012. On the other hand, London and Paris maintained their third and fourth place during the study period. The four top-ranked cities are not merely places where major corporations establish their headquarters, but also centers of global services and management (Taylor, 2004). The fifth-ranked city is Beijing at 70.42 points. Moscow can be found at 31.19 points, which gives it a rank of thirteen. The capital of Poland, Warsaw, is ranked at 7.17 points. Warsaw's status has increased significantly in the last decade. Budapest is at a value of 4.63. The other studied cities did not exceed 2.5 points. This included Prague (2.48 points), Lubin (2.44 points), and Almetyevsk (2.35 points).

The comprehensive index change for selected cities. Comprehensive index values increased the most for cities in so-called emerging markets (Tab. 1). This category of countries is dominated by BRIC countries – Brazil, Russia, India, and China. Cities located in emerging markets strengthen their links with other cities in the world via the establishment of sales offices of foreign corporations, which also makes these cities dominant in their home markets (Liu, Derudder, Taylor 2014). The largest growth has been calculated for Beijing (+47.11 points). This increase amounts to almost half of the value of Tokyo. High growth rates (i.e. global rank) were also calculated for other cities in China including Shanghai, Hong Kong, and Shenzhen. The second growth leader was Mumbai (+16.72). The third growth leader was Moscow (+14.70). The first non-BRIC city in the growth category was seventh-ranked San Jose in the United States (+11.09).

Table 1

Ten cities with the largest increases in the comprehensive index in 2006 – 2012

Rank	City	Country	Change in index
1	Beijing	China	47.11
2	Mumbai	India	16.72
3	Moscow	Russia	14.70
4	Shanghai	China	13.47
5	Sao Paulo	Brazil	12.23
6	Hong Kong	China/Hong Kong	11.89
7	San Jose	United States	11.09
8	Dublin	Ireland	10.40
9	Seoul	South Korea	9.40
10	Shenzhen	China	9.21

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network

Table 2 shows the largest decreases, while Table 1 shows the largest increases in the comprehensive index. Both data types vary spatially. The largest increases in index value can be observed for cities in BRIC countries, while the largest decreases can be observed for cities in advanced economies. Six out of the top ten cities are located in the United States, which is still considered to be the most powerful economy in the world (Csomós, 2013).

Table 2

Ten cities with the largest decreases in the comprehensive index in 2006 – 2012

Rank	City	Country	Change in index
1	Cincinnati	United States	-9,36
2	New York	United States	-8,34
3	Osaka	Japan	-6,76
4	Bridgeport	United States	-6,05
5	Detroit	United States	-5,94
6	Hamilton	Bermuda	-5,52
7	Charlotte	United States	-5,35
8	Essen	Germany	-5,20
9	Baltimore	United States	-5,14
10	Nagoya	Japan	-4,79

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network

Two of the top ten cities are found in Japan, while one is found in Germany. The largest decrease in index value was noted for Cincinnati (-9.36). New York also lost some points but retained its rank as number two in the world (Fig. 2). Other negative values were noted for Osaka in Japan (-6.76) and Bridgeport in the United States (-6.05). Two key American cities found in the country's post-industrial "Rust Belt" were also on the list of cities with large negative index values (Cincinnati and Detroit) (Knox, 1994). The so-called Rust Belt is found in the northern United States and has experienced a major crisis in its heavy industry sector since the 1970s. This crisis has also been accompanied by depopulation (Wilczyński, Wilczyński, 2011). In addition, the key northern American city of Baltimore has been downgraded. Other negative changes in rank were calculated for the city of Essen in Germany as well as Cincinnati in the United States.

Table 3

Changes in comprehensive index values for cities in Central and Eastern Europe

Rank	City	Country	Change in index
1	Moscow	Russia	14.70
2	Warsaw	Poland	4.91
3	Berezniki*	Russia	2.24
4	Krasnodar*	Russia	2.20
5	Magnitogorsk*	Russia	2.14
6	Jastrzębie-Zdrój*	Poland	2.18
7	Zagreb*	Croatia	2.12
8	Lubin	Poland	0.29
9	Prague	Czech Republic	0.16
10	Almetyevsk	Russia	0.10
11	Plock	Poland	0.05
12	Lipetsk	Russia	-0.09
13	Cherepovets	Russia	-0.11
14	Budapest	Hungary	-0.18

** no headquarters in 2006*

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network.

Cities found in Central and Eastern Europe were usually characterized by small changes in the comprehensive index (Tab. 3). Only Moscow stands out in the region with a growth value of +14.70. Moscow's key strengths are its financial sector (Agibetova, Samson, 2008) and energy sector (Taylor, Csomós, 2012). The capital of Poland, Warsaw, has also experienced significantly positive changes. It is the second most globally linked city in Central and Eastern Europe (after Moscow) (Winiarczyk-Raźniak, Raźniak, 2013) and most developer economic center in Central Europe (Raźniak, Winiarczyk-Raźniak, 2015; Raźniak, Nowotnik, 2015). Furthermore, five new cities gained Forbes-listed companies in 2012 – three cities in Russia, one city in Poland, and one city in Croatia. However, the new cities' comprehensive index values remained low. The case of Zagreb in Croatia is interesting. It is the only city in the former Yugoslavia to make the Forbes list. Only three cities in Central and Eastern Europe recorded a small negative change that did not exceed 0.18 points. It may be stated that cities in Central and Eastern Europe are not yet important on the world stage (except for Moscow), but have increased in rank relative to their counterparts in advanced economies.

The political situation in Eastern Europe became less stable in 2014 due to armed conflict between Russia and Ukraine. The European Union and the United States imposed sanctions on selected Russian companies, which prompted the Russian government to retaliate by imposing sanctions on selected products imported by Russia from the European Union (EU strengthens sanctions against separatists in Eastern Ukraine, 2014). These key moves may affect the financial performance of companies in many different sectors, especially those directly affected by the sanctions. Central Europe became largely independent of Soviet political influence by the early 1990s and today are mostly not susceptible to losses caused by economic sanctions imposed by Russia (WRAPUP 1 – Factory output shows Central Europe resilient amid Russia sanctions, 2014). However, it is difficult to predict just how this situation will evolve. At the same time, it is difficult to predict what impact foreign sanctions will have on the Russian companies listed by Forbes Global 2000. The armed conflict with Ukraine and corresponding sanctions imposed on Russia by the West may affect the financial performance of these companies, and their parent cities, especially those associated with the materials sector (Lipetsk, Cherepovets, Almetyevsk). Ultimately, sanctions on Russia may force some Russian companies to be delisted by Forbes Global 2000.

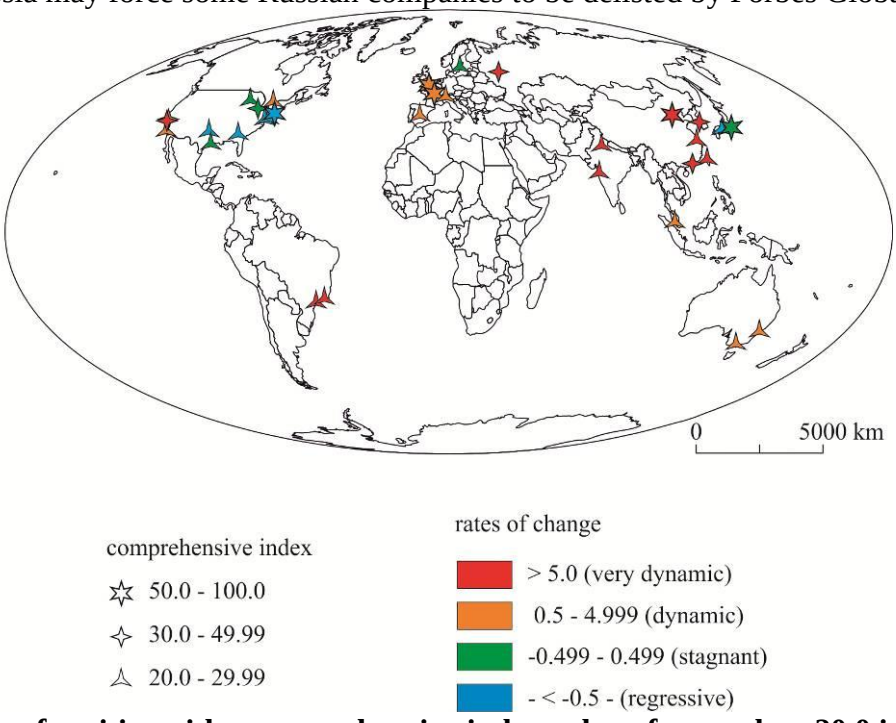

Fig. 3. Changes for cities with a comprehensive index value of more than 20.0 in the years 2006 - 2012

Source: Author's own work based on Forbes Global 2000, Globalization and World Cities Research Network

The spatial distribution of cities with a comprehensive index of more than 20.0 in 2012 varies substantially across the world (Fig. 3). Three regions of the world are characterized by the largest number such cities: (1) United States, (2) East Asia, (3) Western Europe. Moscow (31.20) is the only city ranked higher than 30 outside of the three main regions of concentration. Large cities with somewhat lower potential located in other parts of the world include Mumbai (29.06), Melbourne (23.60), and Kuala Lumpur (23.04).

The spatial distribution of changes in the comprehensive index was quite different (Fig. 3). Three groups of cities were identified for this purpose. The first group includes cities with rapidly increasing index values in so-called emerging markets – primarily Brazil, Russia, India, and China. All four markets are characterized by increasing global linkages (Derudder et. al., 2010). The growing importance of Chinese cities is also a relevant point here (Derudder et. al, 2013). In fact, the two top spots on the Forbes list are occupied by Chinese banks. Hence, it may be stated that the largest cities in China are becoming centers of world finance (Lai, 2012). The second group consists of Western Europe, with all its listed cities designated as dynamic, except for Stockholm (+0.17), which was ranked as stagnant due to low growth rates. The third group consists of the United States, which has been strongly affected by the global financial crisis of 2007. This effect can be observed on the Forbes Global 2000 list published after 2007. Cities in the United States are rated as stagnant or regressive, except for San Jose, which is growing thanks to the information technology sector. Revenues generated by this sector in 2012 reached 1.27 trillion U.S. dollars, which constituted more than 93% of the revenue of companies in San Jose.

Cities - economic potential versus global connections. Cities in Central and Eastern Europe are characterized by low economic potential in comparison with cities in Western Europe, Asia, and the United States. One explanation for this may be the dominance of socialism in the region between World War II and the late 1980s. The fundamental flaw of this economic system was its lack of global competitiveness. Companies in the region entered the post-1989 capitalist era with a marginal presence in the global markets and this is borne out by Forbes Global 2000. The region has received significant foreign investment since the 1990s leading to the emergence of many joint ventures and sales centers of companies not based in Central and Eastern Europe.

Researchers working at the Globalization and World Cities Research Network analyzed global linkages and produced a new typology of cities: alpha++, alpha+, alpha, alpha-, beta+, beta, beta-, gamma+, gamma, and gamma-. The typology is based on the global linkages of 175 large corporations with multinational impact. Most of the corporations (100) are part of the service sector and many (75) are on the Forbes Global 2000 list (Taylor, 2010). Cities with limited global linkages were classified as sufficiency cities and high sufficiency cities.

Table 4

Key world cities and rank of selected cities in Central and Eastern Europe in 2000 – 2012

Year	Top 5 world cities	Position of top 5 Central Eastern European cities in world cities ranking
2000	1. London, 2. New York, 3. Hong Kong, 4. Paris, 5. Tokyo	29. Prague, 34. Moscow, 39. Warsaw, 45. Budapest, 82. Bucharest
2004	1. London, 2. New York, 3. Hong Kong, 4. Paris, 5. Tokyo	30. Warsaw, 34. Budapest, 36. Moscow, 37. Prague, 72. Bratislava
2008	1. London, 2. New York, 3. Hong Kong, 4. Paris, 5. Singapore	12. Moscow, 20. Warsaw, 34. Prague, 36. Budapest, 53. Bucharest
2012	1. London, 2. New York, 3. Hong Kong, 4. Paris, 5. Singapore	14. Moscow, 32. Warsaw, 44. Prague, 62. Budapest, 68. Bucharest

Source: Author's own work based on Globalization and World Cities Research Network

The largest number of global linkages in the period 2000 – 2012 was observed in the case of London, New York, Hong Kong, and Paris (Tab. 4). Tokyo was listed as number five in the period

2000 – 2004, but fell down to sixth place starting in 2008. It was replaced by Singapore. The number of global linkages of cities in Central and Eastern Europe increased significantly during this period of time. Moscow was listed as forty third (first place in beta+) in the year 2000 and fourteenth (alpha) by the year 2012. Warsaw also enjoyed a large increase in global linkages –rising from beta+ in 2000 to alpha- in 2008. While Warsaw managed to maintain its alpha- status, it did slip from 20th place in 2008 to 32nd place in 2012. Its number of global linkages remained roughly the same, but other cities advanced faster and outpaced Warsaw. In the period 2000 – 2012, Prague was rated alpha- thanks to its extensive global linkages. However, its overall rank declined from 29th to 44th. The reason for this mirrored that of Warsaw – no meaningful increases in the number of global linkages resulting in a decline relative to rapidly globalizing cities found mostly in emerging markets.

A comparison of rankings in the world cities classification and the system used in this paper shows significant differences. For example, Warsaw was ranked 32nd in the world cities classification in 2012 and 102nd in terms of the comprehensive index used in this paper. The difference was even larger in the case of Prague – 44th in 2012 based on global linkages and 221st relative to Tokyo. The same was true of Budapest – 62nd in 2012 based on linkages and 150th in relation to Tokyo. Hence, it may be argued that the main cities of Central and Eastern Europe are characterized by much more global potential than what the comprehensive index would suggest. While large foreign corporations do possess sales offices in the region's cities, most corporate headquarters in Central and Eastern Europe are those of regional corporations that do not match major world corporations in size. Once again, the exception is Moscow, which is creating global linkages at a rapid rate and continues to gain ground on the leader of the ranking – Tokyo.

Conclusions. Different city rankings provide different sequences of results at the top of the list. The global city ranking system yields the following sequence – London, New York, Tokyo, Singapore, and Chicago. On the other hand, the world city ranking system yields the following sequence – London, New York, Hong Kong, Paris, and Tokyo. Next, the command control index based on the financial parameters of the largest corporations yields the following sequence – Tokyo, New York, London, Beijing, and Paris. Finally, the ranking system introduced in this paper yields the following sequence – Tokyo, New York, London, Paris, and Beijing. This sequence resembles that of the command control index, but uses six parameters instead of four. The city of Tokyo deserves particular attention. Tokyo is ranked first in terms of corporate financial results and the number of corporate headquarters and GICS. It is ranked third in the global cities index and fifth in the world cities index.

The highest comprehensive index values for 2006 and 2012 were calculated for Tokyo, while New York was second highest. In 2006 both cities were about equal, but in 2012 Tokyo outpaced New York by a large margin. London and Paris were also ranked very high. The four top-ranked cities far outpaced the rest of the list. In 2012 Beijing joined the top part of the list, which now holds five world-leading cities (Comprehensive index above 50.0 pts.). Furthermore, Beijing's ascent has been very rapid – about half of the potential of the world leader – Tokyo. Rapid growth has also been observed in Asia and Latin America, while the United States remains slow possibly due to the global financial crisis of 2007. Western Europe is characterized by relative stagnation. Cities in Central and Eastern Europe were characterized by very low values of the comprehensive index – except for Moscow – which has become the economic and globalization leader of the region. Other cities in the region were ranked low – especially in 2006. The positive side of this situation is the rate of change in the region. It is positive for most cities in Central and Eastern Europe – especially in the case of Moscow and Warsaw. However, it is difficult to know how the unstable political situation in eastern Ukraine will affect the global rank of cities in Central and Eastern Europe in the years to come.

Research has also shown that a city's rank in its region tends to be lower than the magnitude of its international linkages. One reason for this pattern may be the economic weakness of national economies and that of corporations headquartered in the region, while it is still true that many

global corporations establish local sales offices in cities in Central and Eastern Europe, which leads to a larger number of global linkages.

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