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**GERMAN ECONOMY
AS A GLOBAL GENERATOR OF GROWTH AND DEVELOPMENT
– TRENDS AND PROSPECTS**

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Abstract

The main objective of this paper is to synthetically present primary sources and agents of Germany's leading position in the global economy at the turn of the I and II decade of the twenty-first century. Economic growth and economic development is the result of many factors of different nature: traditional and modern, objective and subjective, exogenous and endogenous, economic and non-economic, with institutional and cultural to begin with. This universal statement also fully applies to German economy. The German experience in the restructuring of the economy is valuable from the Polish point of view, despite many well-known differences of the two economies. Germany, despite all the economic disruption and the difficulties of a structural nature (with the demographics to begin with), and dilemmas as to the future of the so called social market economy will remain a powerful and rich country. The economic situation of Poland depended, depends and will depend on the global prosperity, and thus the prosperity of our closest partner, i.e. Germany.

Keywords: German economy, growth, prospects of development.

JEL classification: O11, O16, O33.

Introduction

In the center of our considerations – to their modest extent possible – there is Germany's economy. Germany – the leading, next to France and Britain, country of the European Union – belongs to the richest countries in the world. The economy of Germany was, is and probably will be in the future one of the major foundations of growth and development of multipolar global economy¹.

Germany's rank in the global economy and international economic relations cannot be underestimated. Germany's economy, while being a constant construction site, is a phenomenon worthy of continuous observation and analysis from different points of view. Germany is among the leading global players of the modern global economy, especially next to the USA, China, India, Japan, Russia, Brazil.

The main objective of this paper is to synthetically present primary sources and agents of Germany's leading position in the global economy at the turn of the I and II decade of the twenty-first century. Economic growth and economic development is the result of many factors of different nature: traditional and modern, objective and subjective, exogenous and endogenous, economic and non-economic, with institutional and cultural to begin with². This universal statement also fully applies to German economy.

1. Position of Germany in Europe

Germany (Federal Republic of Germany) after unification is a country with a total area of 357 thousand square kilometers (Poland has about 312 thousand square kilometers) and is the 63rd largest country in the world. In the EU, Germany is one of the largest countries: with regard to the surface Germany is located on the fourth place (after France, Spain and Sweden), in terms of population – Germany is the largest country, with about 82 million inhabitants (followed by France and Great Britain with a population of about 60 million each). Germany is one of highly developed countries, though not distinguished by the highest GDP per capita (€ 30,600 per person according to the Eurostat data from 28.06.2011³). Taking into account the total value of GDP, Germany is Europe's largest economy, generating steady growth of GDP, except for 2009, when the value of GDP decreased (Table 1).

Germany is also one of the few countries which relatively quickly (in 2009) managed to overcome the crisis and to achieve and even surpass, as early as 2010, the value of GDP before the crisis⁴.

Table 1. Economic growth and GDP value in Germany in 2007–2010 and global economic growth

Category	2007	2008	2009	2010	2011 forecast
Economic growth in Germany	2.07.2011	1.0	-4.7	3.6	2.4*
GDP in billion €	2,432.4	2,481.2	2,397.1	2,498.8	–
Global economic growth	4.8	4.1	0.5	3.5	4.4

* The forecast of International Monetary Fund provides for economic growth in Germany at 2,2% in 2011; J. Tartler, *G20 besorgt wegen Lebensmittelkrise*, Financial Times Deutschland, 17.2.2011, p. 10.

Source: Statistisches Bundesamt, <http://www.destatis.de>; D. Walewska, A. Fandrejewska, *Asia's economic dictate*, Rzeczpospolita, 31.12.2010, p. B2.

Germany generates about 27% of EU GDP (EU-15)⁵, France – approximately 21%, Italy and the United Kingdom – around 16% (Poland about 4%). Countries with high GDP value per capita, e.g. the Scandinavian countries, generate 2–3% of EU GDP, Luxembourg 0.5%

2. Trends and sources of growth

A year after the completion of the deepest economic recession since the end of World War II German economy in 2010 recorded the highest economic growth since the reunification in 1990 (+3.6%)⁶. This – considering the post-crisis situation – impressive economic growth was commented in *The Economist* only as a one-year post-crisis rebound effect. This thesis seems to be questionable, the European Commission and international organizations have agreed that the crisis ended and they predict economic growth for the coming years. Data for 2010 and early 2011 confirm that European economies returned to the positive trend of economic growth⁷.

The value growth of the German GDP is generated in approximately 23% from industrial production⁸, in approximately 17% from trade and tourism, and about 24% is generated from services. Compared to other countries, part of industrial production in Germany is large, e.g. in Japan it is about 20%, in Italy ca. 18%, in the EU around 17%, in the USA 13%, in the UK and France about 12% of GDP is generated by the industrial production⁹, which increases again (Figure 1).

In recent years, Germany has become the location of the automotive industry, electrotechnical industry, chemical industry and mechanical engineering industry. The largest German corporations by number of employees are: Deutsche Post AG (nearly half a million workers), Siemens AG (about 400 thousand employees), Volkswagen AG, Daimler AG, Deutsche Telekom AG, Thyssen Krupp AG, BMW, BASF. Lists of 500 and 1000 largest

companies in Germany and in the world with regard to the turnover show in the first 50, inter alia, the above-mentioned companies, but also Allianz, E.ON, Münchener Rück¹⁰. Among the largest companies are industrial companies. German products do not only have global fame, they are also in demand on global markets. German industry has recorded a further increase in orders compared to 2010 (in comparison to the first quarter of 2010 after the first quarter of 2011 by 15.7%¹¹). The demand for German products increased especially due to orders from abroad (by 8.3%).

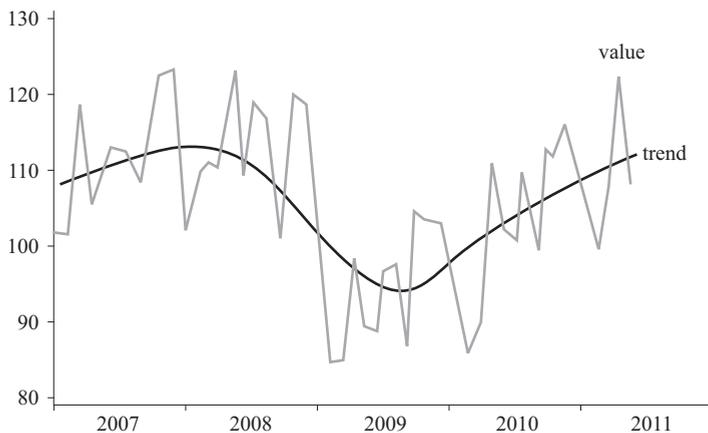


Fig. 1. Industrial production index in Germany; 2005 = 100%

Source: Statistisches Bundesamt, <http://www.destatis.de>.

The main partners of Germany's trade are the EU countries, therefore, a strong euro did not negatively influence the value of the trade. Exports to the euro zone countries in 2010 amounted to 40.9% of total German exports, to the EU countries in total 60.3%, to Asia about 15%, to America 10%, to Africa around 2%¹².

In 1995–2005, the total value of German exports was based mainly on exports of motor vehicles, machinery and chemical products (about 1/3). The upward trend was continued in subsequent years (Table 2), among the export goods are also high-tech products (Table 3).

Germany's most important trading partner is France. The total value of exports in 2010 amounted to 90.7 billion euros (9.5% of the German trade), and imports 61.8 billion. The second most important trading partner in the EU are the Netherlands (Dutch exports is 68.8 billion euros, imports 63.2 billion euros). Outside the EU, the major recipient of German exports is the United States (ca. 7%). China is on the 7th place in the classification of all trading partners, Poland – on the 10th. In 2010, the value of German exports amounted to 959.5 billion euros,

and imports – to 806.2 billion euros. In comparison to 2009, exports increased by 19.4% and imports by 21.3%¹³.

Table 2. Share of the most important products of German exports in 2010

Product	2008	2009	2010	Change in %		Share in exports in 2010 in %
	in billion			2010 in relation to 2009	2010 in relation to 2008	
Cars and car parts	169.5	122.9	159.4	29.7	- 6.0	18.2
Machinery	160.5	124.6	138.7	+ 11.3	- 13.6	15.8
Chemical products	91.7	75.2	90.6	+ 20.5	- 1.3	10.3
Equipment for data processing, electronic equipment and optical products	82.8	67.4	81.4	+ 20.8	- 1.7	9.3
Electrical equipment	59.2	49.9	60.0	+ 20.3	+ 1.4	6.8
Pharmaceuticals and derivatives	47.5	48.1	51.1	+ 6.4	+ 7.7	5.8

Source: *Auszug aus Wirtschaft und Statistik, Außenhandel 2010 – eine Geschichte von Gewinnern und Verlierern*, Statistisches Bundesamt, Wiesbaden 2011, Table 3, p. 361.

Table 3. Share of high-tech products in the total exports of German in 2010

Product	Exports in billion	Share in exports in 2010 in %
Aviation	22.3	2.3
Computers and office supplies	13.5	1.4
Electronics and telecommunications devices	37.2	3.9
Pharmaceuticals	16.8	1.8
Scientific Instruments	25.2	2.6
Electrical machinery	3.8	0.4
Chemical products	6.2	0.6
Non-electrical devices	6.5	0.7
Arms	0.4	0.0
Total	131.7	13.7

Source: *Auszug aus Wirtschaft und Statistik, Außenhandel 2010 – eine Geschichte von Gewinnern und Verlierern*, Statistisches Bundesamt, Wiesbaden 2011, Table 4, p. 361.

The year 2010 ended with a surplus of foreign trade balance of 153.3 billion euros (2009: 138.7 billion). Germany belongs to the countries that generate surplus in current sales not only with the EU countries, but also with the rest of the world. This condition persists for years due to the high competitiveness of German products. These are traditionally mainly vehicles,

machinery, high-tech products and chemicals/pharmaceuticals. This imbalance is often assessed as harmless to the global economy. This thesis seems to be correct, because the imbalance has lasted for years and has had no adverse effects.

G-20 group has a different opinion. After the April meeting in Washington, apart from some other findings, it was agreed generating surplus in current sales should be reduced. For this reason, the situation of countries such as Germany, China (but also France, USA and Japan) will be examined in particular because their behavior with regard to the participation and position in the global economy can affect the bringing about of another crisis¹⁴. Simultaneously, G-20 summit assumed the crisis to be overcome¹⁵.

3. German strategy for the future

Development strategies for the future are advertised by Germany not in the Erhard manner with a slogan “Wohlstand für alle” but with the slogan “Schafft Wohlstand Wissen” (knowledge creates wealth). New development strategies were adapted to this idea to ensure that the German economy and German products are competitive and the country is attractive as a place to live and work. Germany’s profile is to be the site of highly specialized locations, innovative technologies, including high-tech, nanotechnology, biotechnology and derivatives. Investment in research and development (R+D) in these industries are financed not only by companies, but also supported from the budget. Spending on research and development is often criticized as too low, but it is not consistent with the actual situation. Germany spent slightly below 3% of GDP on R+D in 2009, Denmark, Sweden and Iceland just over 3% (EU average was 2.1% of GDP for the EU-15)¹⁶. Supporting the development and research, as well as the formation of clusters of various fields is carried out throughout the world, including Germany and Poland, primarily in the creation of science parks, technology parks and knowledge incubators¹⁷. Combination of science, in particular the engineering and natural sciences with their applications, e.g. in production is expected to bring additional synergy effects, securing the theoretical and practical achievements of science and using them to develop new technologies and products.

Development of new technologies designed to assure the competitiveness of the German economy is supported in the framework of national programs and measures. Federal Ministry for Science and Research has developed strategies for the development of nanotechnology, high-tech and for the support of cluster development¹⁸. There are already a few biochemical clusters in Germany, the largest are located in the regions of Berlin-Brandenburg, Heidelberg/Rhein-Neckar and Munich. Most companies in this sector (about 400) had their seats in 2009 in

Germany (in the UK about 300, in France about 180) and the German biotechnology industry turnover increased from 300 million in 1996 to over 2 billion euro in 2010¹⁹.

Investments in nanotechnology development are to ensure the transfer of these technologies' potential for further development of research, for use in medicine and healthcare industry, to allow protection of the environment by improving energy production, for the development of energy-saving mobility, sustainable development of agriculture and improvement of safety in the manufacture of food products.

International corporations of chemical and pharmaceutical industries set up their businesses in Germany, inter alia AMGEN, JANSSEN-CILLAG, genzyme, Novartis, Pfizer, 3M²⁰. These companies by investing in R+D also create jobs. Similarly large emphasis is placed on the development of optical technologies considered to be technologies of the future.

The aspirations to develop innovative technologies are correlated with the objectives of the Competitive Economy Operational Program²¹, which supports activities in the field of technological innovation, product innovation, service, application, process and business innovation that directly or indirectly contribute to the formation and development of innovative enterprises. Both Germany and Poland can participate in this program.

4. Forecasts of the German share in the world's GDP

Germany's strong position in Europe is sometimes questioned²². We must, however, agree that this is the biggest EU economy, and since the industrial revolution and industrialization, the traditional headquarters of now multinational corporations, such as Siemens, Bosch, Thyssen Krupp, BMW, Daimler, Volkswagen, Schering (now Bayer Schering Pharma), BASF, Lufthansa, SAP and many others. These and other joint-stock companies often set up their own foundations involved in research and development. Admittedly a combination of curiosity, inventiveness and ingenuity with financial capacity to implement projects provides the corporations with their positions in global markets. An important issue that deserves a detailed analysis would be a strong association of the German economy with banks²³.

For many years Germany has been and still is the economic leader of not only the EU, Europe or even the world, and till the crisis Germany maintained a leadership in the value of exports. According to forecasts of various institutions this position, however, will be weaker over the coming decades. Common Europe, as the EU economy, and even the so called old world, so far defined as the first world, in accordance with these forecasts is to give way to new global players (Table 4).

Table 4. Share in the global GDP in 2020 and 2050 in %

Country	In 2020	Place	Country	In 2050
G7*	41.0	1	Bric*	45.0
Bric**	28.0	2	China	27.0
USA	19.8	3	G7	22.0
China	17.0	4	Next 11	13.0
Euro zone	15.0	5	USA	12.0
Next 11***	9.0	6	India	11.0
Japan	7.0	7	Euro zone	7.5
Germany	4.7	8	Brazil	5.0
Brazil	4.0	9	Indonesia	3.0
India	3.0	10	Japan	2.0
Russia	2.0	11	Russia	2.0
Great Britain	2.0	12	Mexico	2.0
Mexico	1.8	13	Germany	2.0
Korea	1.7	14	Turkey	1.8
Turkey	1.6	15	Great Britain	1.7
Indonesia	1.0	16	Nigeria	1.6
Saudi Arabia	0.8	17	Philippines	1.0
Iran	0.5	18	Egypt	0.8
RSA	0.3	19	RSA	0.5
Egypt	0.2	20	Iran	0.3

* G7: USA, Japan, Germany, France, Great Britain, Italy, Canada.

** Bric: Brazil, Russia, India, China.

*** Next 11: Korea, Vietnam, Mexico, Iran, Turkey, Indonesia, Philippines, Egypt, Nigeria, Bangladesh, Pakistan.

Source: *BRICs-Kompass*, Goldman Sachs International, Frankfurt/M., 2006; *Die BRICs nehmen Fahrt auf*, Goldman Sachs International, Frankfurt/M., 2010.

The forecast of global economy development presented by Goldman Sachs is trying to predict the year when new emerging „stars” of the global economy overtake the old economic powers, including Germany, the EU-15, the USA. An economic leader in the coming decades will very probably be the so called BRIC countries, namely Brazil, Russia, India and China. Why these countries and not others? Their chance is their size, which gives them economic significance and human capital. These countries are likely to become global economic centers in the near future. You can also assume that the concentration of natural resources in these countries will play an important role in this process. Even now, China is the biggest producer of rare metals used in high-tech products (including gallium, indium and neodymium), Russia – palladium, RSA – platinum (it is estimated that the demand for these metals will increase to

2030 from 100 to 400% [platinum/indium and gallium)]²⁴. China is still attractive to investors (the attractiveness increased in 2006–2008 from 41 to 47%), India was assessed in a similar way (increase of attractiveness for investment from 18 to 30%) as well as Russia (from 5 to 21%). In the same period of time, the attractiveness of Western Europe fell from 68 to 33%, and the attractiveness of the USA and Canada – from 48 to 41%²⁵.

According to the assessment of Goldman Sachs China took over Germany in 2010 and will overtake the USA in 2040, Russia will overtake Germany around 2025, Brazil about 2035²⁶. The four BRIC countries together will be larger economies than the G7 countries around the year 2039.

These forecasts coincide with current trends – China is no longer willing to be a factory for other countries and invests more directly in Europe, China also provides loans, e.g. to Ukraine or supports investments such as building a technology park in Bulgaria²⁷. In 2010, the Chinese car manufacturer acquired the Swedish VOLVO, Li Ka Shing acquired British Energy (EDF), in Norway China Bluestar Group acquired a company that specializes in mining and metal extraction. German firms have also changed owners: textile machinery manufacturer Asyst Bullmer was sold to New Jeck Swing Machine in 2009, Medion from Essen negotiates the sales with Lenovo company in 2011, a manufacturer of parts that are used in Preh car production was sold to Joyson holding in 2011. In some cases the sums are not known, others amount to 1.5 to 9 billion US dollars²⁸.

A report published under the HSBC auspices *The Word in 2050* predicts a similar scenario and puts China in the first place before the United States, India, Japan, Germany, Great Britain, Brazil, Mexico and France. The author groups the aforementioned countries other than Goldman Sachs, and she shows the strongest 30; her evaluation is analogous to the above-mentioned one. In this comparison, Poland is on the 24th place among the thirty largest economies in the world in 2050²⁹. Moreover, a scenario of further economic growth is interesting. Over the next four decades this projection predicts only about one-percent growth for the USA, between 6.5% (2010–2020) to 4.6% in the decade 2040–2050 for China, a little over 2% for Germany throughout the whole period, about 4% and slightly below for Poland. High growth (around 4.5%) is also predicted, inter alia, in the case of Russia, India and Egypt.

A catch-up effect, in this case a take-over effect and possible scenarios are the subject of many papers³⁰, however, the forecasts are common – China will become a new economic leader. This is also confirmed by the trends of forming megacities³¹ that agglomerate in Asia – they will be the new economic centers of the world.

Conclusions

When we talk about the future, we can be sure of one thing: that common sense fails. There is no magic twenty-year cycle, there is no simple force that rules this formula. It is simply so that things that at any given moment of history seem to be durable and reliable can change with lightning speed. Ages come and go, the similar situation is with empires and superpowers. In international relations the world that we see today will be totally different in twenty years, or even sooner³².

In the foreseeable future Germany, despite all the economic disruption and the difficulties of a structural nature (with the demographics to begin with), and dilemmas as to the future of the so called social market economy will remain the industrial and service power and a rich country. The German experience in the restructuring of the economy is valuable from the Polish point of view, despite many well-known differences of the two economies. The economic situation of Poland depended, depends and will depend on the global prosperity, and thus the prosperity of our closest partner, i.e. Germany.

Notes

- ¹ In the literature, the group of *3G countries (Global Growth Generators)* has been extracted recently, that includes countries with the greatest potential for growth and development in the next few decades: Bangladesh, China, Egypt, Philippines, India, Indonesia, Iraq, Mongolia, Nigeria, Sri Lanka, Vietnam. Mexico, Turkey and Poland also belong to countries with above-average growth prospects (see, inter alia, G. Friedman (2009).
- ² The literature on growth of development is impressively rich. Among some interesting items worth mentioning, there are, inter alia: Landes (2000); Balcerowicz, Rzońca (2010); Kolodko (2008); Kolodko (2010).
- ³ This is the 10th place in Europe after Luxembourg (€ 82,100 / person), Norway (€ 63,800), Denmark (€ 42,300) and Sweden (€ 37,000), while the 9th in the EU. In comparison, the value of U.S. GDP per capita in 2010 amounted to € 35,700. The value of GDP obtained per capita in 2010 places Germany among the countries that are above the EU-15 average (€ 28,400), followed by France and Great Britain. See Eurostat, BIP und Hauptkomponenten, <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>.
- ⁴ Another situation occurred in Poland, the Polish GDP grew in 2009, but declined in 2010. For the years 2011–2012 it is predicted to increase again. Polish situation during the crisis was exceptional.
- ⁵ The forecast of International Monetary Fund in 2011, provides for economic growth in Germany at 2.2% in 2011. Tartler (2011), p. 10.
- ⁶ Own calculations for 2009–2011.
- ⁷ *The Economist* of 3.2.2011 r. in the article „Angela in Wonderland” emphasizes that it is only a one-year effect of post-crisis bounce: “bungee effect”. See Angela in Wonderland, What Germany’s got right, and what it hasn’t, *The Economist* online, <http://www.economist.com/node/18070170>.
- ⁸ See Forecasts of the European Commission, WTO and UN forecasts, Sachverständigenrat.
- ⁹ It is worth noting the factors that led to this. Germany is among the countries whose industrialization was delayed for decades in relation to England or France. The development of modern industry took place just after 1830. At the turn of the XIX and XX century Germany became the strongest power in Europe. Apart from steel and metallurgic industry, chemical industry developed rapidly, and later also electrotechnical industry, and Germany’s share in the

world's industrial production increased too. GDP per capita in Germany (in prices of 1990) rose from \$ 1,077 in 1820 to \$ 1,839 in 1870 and to 1913 to \$ 3,638. Especially in the period 1870–1913 there was a surge in prosperity for all countries of Western Europe (from \$ 1,960 to \$ 3,458 per capita). See Butschek (2006), p. 10, Table 1. The years after World War II brought a phenomenal economic growth due to the reconstruction from the devastation, after the crisis of the 70-ies of the twentieth century the increase was rather low. After German reunification, the value of economic growth was not high too, nevertheless expressing prosperity growth in the GDP – prosperity grew.

¹⁰ Dürand (2010), p. 96.

¹¹ See *Weltonline* and *Forbes*.

¹² *Die wirtschaftliche Lage in der Bundesrepublik Deutschland im Juni 2011* (2011).

¹³ With the division into particular countries – France on the first place, USA – on the second, Holland – on the third, Great Britain – on the fourth.. See *Auszug aus Wirtschaft und Statistik* (2011), p. 358, pp. 358, 359.

¹⁴ *Auszug aus Wirtschaft und Statistik* (2011), pp. 354, 359.

¹⁵ Rose (2011), p. 44.

¹⁶ The European Commission in its spring forecast of March 2011 predicts favorable development of economic situation also for the years 2011 and 2012.

¹⁷ Eurostat data, Forschung und Entwicklung, <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>.

¹⁸ Worldwide, there are approximately 3500 science and technology parks, around 1100 in North America and Europe, and ca. 700 in Asia. In Europe, most of these institutions are in Germany (about 165), France (about 55) and Great Britain (about 60). See *Regional Research Intensive Clusters* (2007), p. 66.

¹⁹ See *Ideen. Innovation. Wachstum* (2010); *Deutschlands Spitzencluster* (2010); *Aktionsplan Nanotechnologie 2015* (2011).

²⁰ Rakau (2011), pp. 1, 6.

²¹ Nusser, Tischendorf (2010).

²² *Wettbewerbsfähige Europäische Regionen* (2007).

²³ Gawin (2007), p. A7.

²⁴ See Flejterski, Jodkowska (2011), p. 305 and further.

²⁵ Rickens (2011), pp. 21–25.

²⁶ *Otwarty świat*, p. 8.

²⁷ *BRICs-Kompass* (2006), p. 7.

²⁸ Brüggemann (2011), No. 66, p. 20.

²⁹ See Mayer-Kuckuk, Koenen (2011), pp. 20–21.

³⁰ With the growth over 3,5% In the doming decades. See Ward (2011), pp. 3, 10, 16.

³¹ See also: Ferguson (2011), p. 27.

³² In comparison with 1975 (figures in brackets) by the year 2025 the population will have particularly increased in Tokyo (26.6 million inhabitants) to 36.4 million, Beijing (6.0 million) to 14.5, Delhi (4.4 million) to 22.5 million, Shanghai (7.3 million) to 19.4 million, Cairo (6.4) to 15.6 million, Mexico City (10.7 million) to 21 million, Moscow from about 8 million to 10 million. Population of Paris will have risen by just under 2 million to around 10 million inhabitants, while the population of Berlin will basically not have changed (3.1/3.4 mln). See Schwarz (2010), p. 30 and further. The McKinsey Institute forecast predicts that in 2025 for 10 cities with the highest GDP per capita one will be located in China (Macau), three in South Korea and one in the Philippines (just one in the USA, but three in Norway). See Branigan (2011), p. 23.

³³ See Friedman (2009), p. 17.

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