



## Characteristics of the logistics performance index

The LPI measures on-the-ground trade logistics performance helping national leaders, key policymakers, and private sector traders understand the challenges they and their trading partners face in reducing logistical barriers to international commerce<sup>1</sup>.

A multidimensional assessment of logistics performance, the LPI compares the trade logistics profiles of 155 countries and rates them on a scale of 1 (worst) to 5 (best). The ratings are based on 6,000 individual country assessments by nearly 1,000 international freight forwarders, who rated the eight foreign countries their company serves most frequently. The LPI's six components include<sup>2</sup>:

- the efficiency of the clearance process (speed, simplicity, and predictability of formalities) by border control agencies, including customs,
- the quality of trade- and transport-related infrastructure (ports, railroads, roads, information technology),
- the ease of arranging competitively priced shipments,
- the competence and quality of logistics services (transport operators, customs brokers),
- the ability to track and trace consignments,
- the frequency with which shipments reach the consignee within the scheduled or expected delivery time.

The components were chosen based on recent theoretical and empirical research and on the practical experience of logistics professionals involved in international freight forwarding. Earlier methodologies developed in 1993 used a survey format, a 2-point scale, and open-ended questions to measure the perceived importance and influence of different components affecting the logistic friendliness of countries. In a follow up study, only the characteristics that best encapsulated logistics performance were included for evaluation. The methodology was refined with contributions from interviews conducted for the Trade and Transport Facilitation Audits performed by World Bank and others over more than a decade. The figure maps the six LPI indicators in two main categories:

- areas for policy regulation, indicating main inputs to the supply chain (customs, infrastructure, and services),
- supply chain performance outcomes (corresponding to LPI indicators of time, cost, and reliability–timeliness, international shipments, and tracking and tracing).

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<sup>1</sup> *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. iii. This is the third edition of *Connecting to Compete: Trade Logistics in the Global Economy*. At its heart is the Logistics Performance Index (LPI), which the World Bank has produced every two years since 2007.

<sup>2</sup> *Ibidem*, p. 1.

The LPI uses standard statistical techniques to aggregate the data into a single indicator<sup>3</sup>. This single indicator can be used to compare countries, regions, and income groups. It can also be used for country-level work. Because operators on the ground can best assess these vital aspects of logistics performance, the LPI relies on a structured online survey of logistics professionals from the companies responsible for moving goods around the world: multinational freight forwarders and the main express carriers. Freight forwarders and express carriers are those best able to assess how countries perform. And their views matter, directly affecting the choice of shipping routes and gateways, and influencing firms' decisions on production location, choice of suppliers, and selection of target markets. Their participation is central to the quality and credibility of the LPI, and their involvement and feedback have been essential in developing and refining the survey in this third edition of the LPI. Nearly 1,000 logistics professionals in 143 countries participated in the 2011 survey for the 2012 LPI, and 12 additional countries were covered<sup>4</sup>.

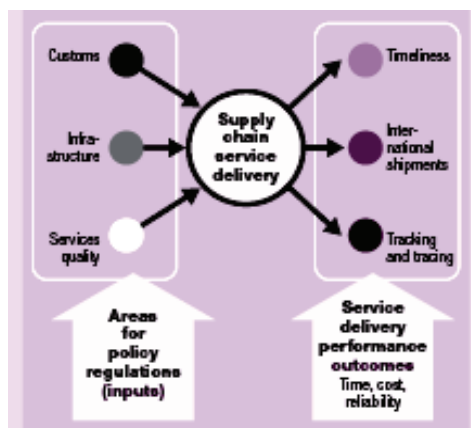


Figure 1. Input and outcome LPI indicators

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 7.

The Logistics Performance Index is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance. The LPI is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers), providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade. They combine in-depth knowledge of the countries in which they operate with informed qualitative assessments of other coun-

<sup>3</sup> See appendix 4 of *Connecting to Compete 2012: Trade Logistics in the Global Economy*, for a detailed description of how the LPI is calculated.

<sup>4</sup> *Ibidem*, p. 7.

tries where they trade and experience the global logistics environment. Feedback from operators is supplemented with quantitative data on the performance of key components of the logistics chain in the country of work, data collected for nearly 130 countries. The LPI consists therefore of both qualitative and quantitative measures and helps build profiles of logistics friendliness for these countries. It measures performance along the logistics supply chain within a country and offers two different perspectives: international and domestic. International LPI provides qualitative evaluations of a country by its trading partners in six areas – logistics professionals working outside the country. Domestic LPI provides both qualitative and quantitative assessments of a country by logistics professionals working inside it. It includes detailed information on the logistics environment, core logistics processes, institutions, and performance time and cost data<sup>5</sup>.

The “logistics gap” between high- and low-income countries remains wide. The countries with the worst performance in 2012 were least developed countries that were also landlocked countries, small-island states, or post-conflict countries.

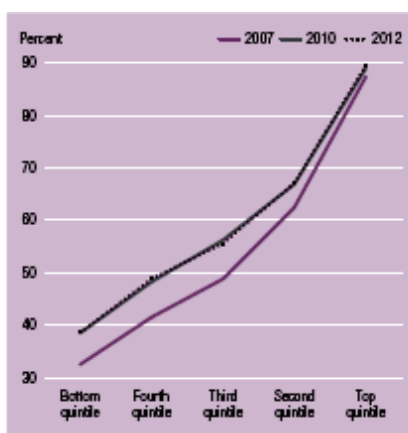


Figure 2. LPI score as percentage of highest LPI score by LPI quintile, 2007, 2010, and 2012  
 Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*,  
 The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 2.

The quality of logistics services is central to trade efficiency and is strongly associated with the reliability of supply chains and the predictability of service delivery available to producers and exporters. Freight transport and the accompanying logistics industry represent one of the most dynamic and important sectors of the European economy, accounting for at least 10 percent of GDP. By showing countries how they stack up against their competitors and highlighting the costs of poor logistics, the LPI helps policymakers and the private sector build a strong case for reform<sup>6</sup>.

<sup>5</sup> International LPI global ranking, <http://lpiurvey.worldbank.org/about>, 17.05.2013.

<sup>6</sup> *Connecting to Compete 2012: Trade Logistics in the Global Economy*, op. cit., p. 3-6.

The distribution of LPI scores is broken down into four categories, used in all editions of *Connecting to Compete*<sup>7</sup>:

1. *Logistics unfriendly* – includes countries with severe logistics constraints, such as the least developed countries (bottom LPI quintile).
2. *Partial performers* – includes countries with a level of logistics constraints most often seen in low- and middle-income countries (fourth and third LPI quintiles).
3. *Consistent performers* – includes countries rated for logistics performance more highly than most others in their income group (second LPI quintile).
4. *Logistics friendly* – includes high performers, mostly high-income countries (top LPI quintile).

The gap between the highest and lowest scores in the 2012 LPI, and the score distribution across countries, are about the same as in 2010 (figure 1). Singapore ranked highest at 4.13, Burundi the lowest at 1.61 (19 percent of Singapore's top score). The 2012 LPI does not suggest that the converging trend from the 2007 LPI to the 2010 LPI is continuing. From 2007 to 2010, lower performing countries improved their overall LPI scores more than did higher performing countries. But from 2010 to 2012, they were not able to further narrow the gap<sup>8</sup>.

With the LPI, the World Bank aims to focus attention on an issue of global importance and provide a platform for dialogue among government, business, and civil society. Logistics encompasses an array of essential activities – from transport, warehousing, cargo consolidation, and border clearance to in country distribution and payment systems – involving a variety of public and private agents. A competitive network of global logistics is the backbone of international trade. Improving logistics performance has become an important development policy objective in recent years because logistics have a major impact on economic activity. Evidence from the 2007 and 2010 LPIs indicates that, for countries at the same level of per capita income, those with the best logistics performance experience additional growth: 1 percent in gross domestic product and 2 percent in trade. These findings are especially relevant today, as developing countries need to invest in better trade logistics to boost recovery from the current economic crisis and merge in a stronger and more competitive position<sup>9</sup>.

### **Countries – leaders according to the logistics performance index**

Many analysts believe logistics is the barometer of the economy, indicating the course of basic economic trends. The intercontinental flows of goods and supply chain management on a global scale have become incre-

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<sup>7</sup> Ibidem, p. 9.

<sup>8</sup> Ibidem.

<sup>9</sup> *Connecting to Compete 2010: Trade Logistics in the Global Economy*, Index and Its Indicators, The World Bank 2010, p. III.

asingly important nowadays. Future Value Chain Report 2020 indicates the 12 global trends that will have a significant impact on a business over the next 10 years. A sustainable supply chain appears among them<sup>10</sup>. According to the World Bank report „Connecting to Compete 2012: Trade Logistics in the Global Economy” Singapore, Hong Kong, China, Finland, Germany, Netherlands, Denmark, Belgium, Japan, USA, and United Kingdom have taken the first ten places based on logistics performance index (table 1)<sup>11</sup>.

Table 1. Leaders according the LPI 2012, years 2010 and 2007

Economy	2012			2010			2007		
	LPI rank	LPI score	% of highest performer	LPI rank	LPI score	% of highest performer	LPI rank	LPI score	% of highest performer
<b>Singapore</b>	1	4.13	100	2	4.09	99.2	1	4.19	100
<b>Hong Kong SAR, China</b>	2	4.12	99.9	13	3.88	92.4	8	4.00	94.1
<b>Finland</b>	3	4.05	97.6	12	3.89	92.6	15	3.82	88.3
<b>Germany</b>	4	4.03	97.0	1	4.11	100.0	3	4.10	97.1
<b>Netherlands</b>	5	4.02	96.7	4	4.07	98.5	2	4.18	99.6
<b>Denmark</b>	6	4.02	96.6	16	3.85	91.4	13	3.86	89.6
<b>Belgium</b>	7	3.98	95.3	9	3.94	94.5	12	3.89	90.7
<b>Japan</b>	8	3.93	93.8	7	3.97	95.2	6	4.02	94.8
<b>United States</b>	9	3.93	93.7	15	3.86	91.7	14	3.84	89.1
<b>United Kingdom</b>	10	3.90	92.7	8	3.95	94.9	9	3.99	93.8

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 8.

Singapore has a leading position with its LPI 4.13. In 2007, Singapore also took first place with a index value of 4.19. In 2010, Singapore gave way for Germany to take first place and took second. The following table 2 shows the LPI scores in six key dimensions.

Detailed analysis shows that Singapore does not occupy a leading position in each of the six parameters. It is a leader in the efficiency of border controls, including customs (score 4.10) as well as timely delivery of consignments within the scheduled delivery time (score 4.39). For example, according to the dimension of the quality of infrastructure in 2012, Germany occupied the leading position (infrastructure index score 4.26). The leader in ease of organizing shipments at competitive prices was Hong Kong, China (International shipments score 4.18). According to the parameter of logistic services and competence, such as carriers, customs agents Finland and Denmark occupy first place (Logistics competence index value 4.14). According to the identification and tracking parameter, Finland has got the leading position (Tracking & Tracing score 4.14).

<sup>10</sup> *Future Value Chain 2020*, Capgemini, The Consumer Goods Forum, HP 2011.

<sup>11</sup> *Connecting to Compete 2012: Trade Logistics in the Global Economy*, op. cit., p. 1.

Table 2. The top 10 performers on the 2012 LPI

Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Singapore	1	4.13	4.10	4.15	3.99	4.07	4.07	4.39
Hong Kong, China	2	4.12	3.97	4.12	4.18	4.08	4.09	4.28
Finland	3	4.05	3.98	4.12	3.85	4.14	4.14	4.10
Germany	4	4.03	3.87	4.26	3.67	4.09	4.05	4.32
Netherlands	5	4.02	3.85	4.15	3.86	4.05	4.12	4.15
Denmark	6	4.02	3.93	4.07	3.70	4.14	4.10	4.21
Belgium	7	3.98	3.85	4.12	3.73	3.98	4.05	4.20
Japan	8	3.93	3.72	4.11	3.61	3.97	4.03	4.21
United States	9	3.93	3.67	4.14	3.56	3.96	4.11	4.21
United Kingdom	10	3.90	3.73	3.95	3.63	3.93	4.00	4.19

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 36.

The next twenty countries in the World Bank's ranking *Connecting to Compete 2012: Trade Logistics in the Global Economy*, in 2012, are presented in table 3.

Table 3. Countries according to World Bank ranking; from 11 to 30 places in 2012

Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Austria	11	3.89	3.77	4.05	3.71	4.10	3.97	3.79
France	12	3.85	3.64	3.96	3.73	3.82	3.97	4.02
Sweden	13	3.85	3.68	4.13	3.39	3.90	3.82	4.26
Canada	14	3.85	3.58	3.99	3.55	3.85	3.86	4.31
Luxembourg	15	3.82	3.54	3.79	3.70	3.82	3.91	4.19
Switzerland	16	3.80	3.88	3.98	3.46	3.71	3.83	4.01
United Arab Emirates	17	3.78	3.61	3.84	3.59	3.74	3.81	4.10
Australia	18	3.73	3.60	3.83	3.40	3.75	3.79	4.05
Taiwan	19	3.71	3.42	3.77	3.58	3.68	3.72	4.10
Spain	20	3.70	3.40	3.74	3.68	3.69	3.67	4.02
Korea, Rep.	21	3.70	3.42	3.74	3.67	3.65	3.68	4.02
Norway	22	3.68	3.46	3.86	3.49	3.57	3.67	4.09
South Africa	23	3.67	3.35	3.79	3.50	3.56	3.83	4.03
Italy	24	3.67	3.34	3.74	3.53	3.65	3.73	4.05
Ireland	25	3.52	3.40	3.35	3.40	3.54	3.65	3.77
China	26	3.52	3.25	3.61	3.46	3.47	3.52	3.80
Turkey	27	3.51	3.16	3.62	3.38	3.52	3.54	3.87
Portugal	28	3.50	3.19	3.42	3.43	3.48	3.60	3.88
Malaysia	29	3.49	3.28	3.43	3.40	3.45	3.54	3.86
Poland	30	3.43	3.30	3.10	3.47	3.30	3.32	4.04

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 36.

Such countries as Austria, France, Sweden, Canada, Luxembourg, Switzerland, United Arab Emirate, Australia, Taiwan, Spain were ranked in the second ten. Polish logistics did not change the position occupied in 2010, and in 2012 was positioned in 30th place among the countries evaluated by the LPI. Thus, Poland remains among countries with the highest performance logistics (figure 2).

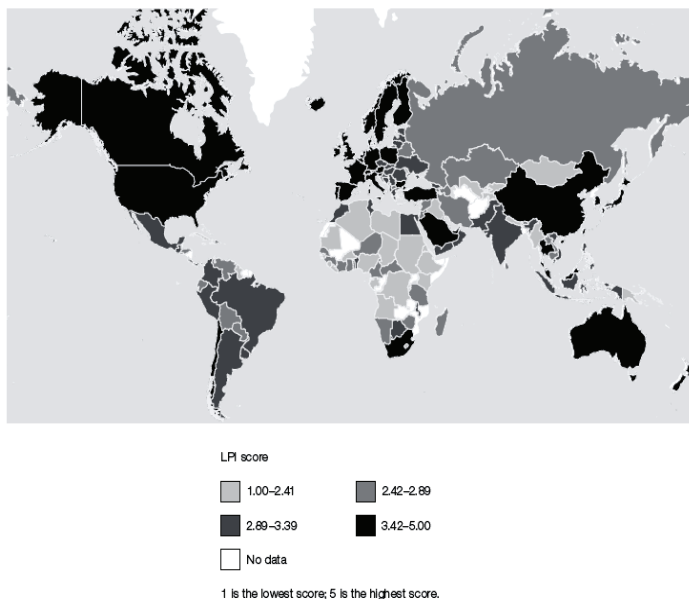


Figure 2. Countries according to World Bank ranking of LPI  
Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*,  
The Logistics Performance Index and Its Indicators, The World Bank 2012.

The presented evaluation shows that many challenges arise before Polish logistics in order to achieve the highest world standards. The main problem seems to be building a coherent sustainable logistics system created on the basis of a global transport network and integrated logistics hubs. The necessary elements to create such a structure in Poland are: 1) the development of intermodal transport using inter-logistics centers and 2) the use of global standards for the exchange of information. The basis for such a nationwide logistics network is the growing network of private investors' logistics centers that require integration and harmonization in a sustainable system. Experience gained in EU projects suggests that the way to this goal may be regional solutions that solve supply chain problems such as administrators of transport infrastructure, creators of regulations, and consumers of transport and logistics service providers<sup>12</sup>.

<sup>12</sup> I. Fechner, G. Szyszka, *Logistyka w Polsce. Raport 2011*, Instytut Logistyki i Magazynowania, Poznań 2012, p. 37.



## Polish position according to the logistics performance index against the countries of Central and Eastern Europe, EU 11

The report Investment World Report (WIR) in 2004 enumerates the following countries in a group of countries of Central and Eastern Europe<sup>13</sup>: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Serbia, Montenegro, Slovak Republic, Slovenia, FYR Macedonia, and Ukraine.

Currently, eleven countries in the group of Central and Eastern Europe became part of the European Union, creating the group EU 11. EU 11 refers to the 11 European Union (EU) member states: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, Slovenia and Croatia<sup>14</sup>. Table 4 shows the general economic information about the countries of EU 11.

Table 4. General information about the countries of Central and Eastern Europe, members of the European Union in 2011

Country	Area in km <sup>2</sup>	Population		DGP in mln EUR	DGP per capita w EUR	
		In thousands of people	Per 1 km <sup>2</sup>		According to nominal rate	According to purchasing power
Bulgaria	110 879	7 282	65,7	39 668	5 400	11 600
Croatia	56 594	4 285	75,7	43 904	10 300	15 200
Czech Rep	78 867	10 516	133,3	152 311	14 500	20 100
Estonia	45 227	1 340	29,6	16 998	12 700	16 900
Lithuania	65 300	2 972	45,5	32 864	11 000	16 600
Latvia	64 559	2 018	31,3	22 258	10 900	14 700
Poland	312 685	38 533	123,2	381 214	9 900	16 200
Romania	238 391	21 305	89,4	131 747	6 200	11 800
Slovak Rep	49 035	5 411	110,3	71 463	13 200	18 400
Slovenia	20 273	2 059	101,6	35 466	17 200	21 000
Hungary	93 028	9 906	106,5	97 674	9 800	16 500

\* 2011

Source: Analysis of the Economic Situation of Countries in Central and Eastern Europe, National Bank of Poland, Economic Institute Office of the World Economy, July 2013, p. 4.

A slowing global economy, especially the recession of the Euro, decelerated economic growth in the EU 11 countries. Overall, the EU 11 year-on-year growth rate dropped from 3.1 percent in 2011 to 0.8 percent in 2012. In EU 15<sup>15</sup>, economic activity contracted 0.4 percent last year (figure 3)<sup>16</sup>.

<sup>13</sup> World Investment Report 2004, *The Shift Towards Services*, UNCTAD, United Nations, New York and Geneva 2004.

<sup>14</sup> Throughout in *Regular Economic Report (RER)*, for simplicity, this group of eleven countries is referred to as EU 11.

<sup>15</sup> The group of EU 15 countries comprises: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

The EU 11 countries will retain their relatively stronger growth performance over EU 15, which is, in the aggregate, contracting (table 5). While restoring financial and macroeconomic balances is a top policy priority for all EU 11 countries, the structural-reform agenda will have to be pursued vigorously. For most EU 11 countries the priority is now to correct their excessive deficits and ensure long-term sustainability of public finances<sup>17</sup>.

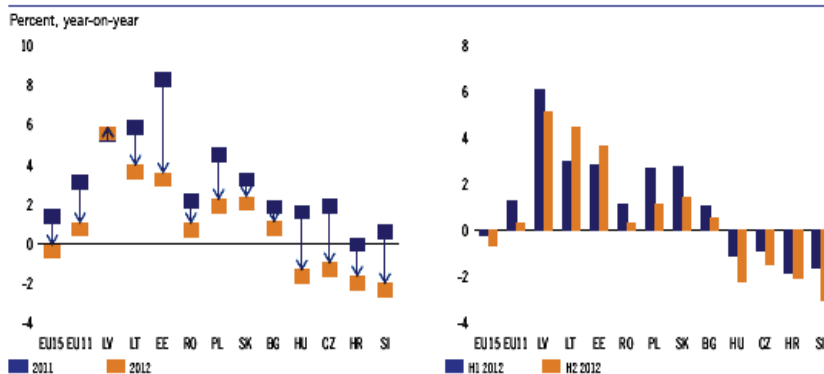


Figure 3. GDP rate of change in EU 15 and EU 11 Countries

Source: *EU 11. Regular economic report*, The World Bank, Europe and Central Asia Region, June 2013, p. 4.

Table 5. EU 11 Growth Prospects in %

Country	2012	2013	2014
EU 15	-0,4	-0,2	1,4
EU 11	0,8	0,8	2,0
Bulgaria	0,8	1,2	2,1
Croatia	-2,0	-0,4	1,5
Czech Republic	-1,3	-0,4	1,6
Estonia	3,2	3,0	4,0
Latvia	5,6	3,6	4,1
Lithuania	3,6	3,0	3,5
Hungary	-1,7	0,3	1,5
Poland	1,9	1,0	2,0
Romania	0,7	1,7	2,2
Slovenia	-2,3	-2,3	-0,1
Slovak Republic	2,0	0,7	2,0

Source: *EU 11. Regular economic report*, The World Bank, Europe and Central Asia Region, June 2013, p. 35.

The recent growth forecasts of 2013 and 2014 for the EU 11 region have been revised downwards (similarly to forecasts for almost all economies in the world). It is expected that the economic stagnation that was ob-

<sup>16</sup> *EU 11. Regular economic report*, The World Bank, Europe and Central Asia Region, June 2013, p. 4.

<sup>17</sup> *EU 11. Regular economic report*, op. cit., p. 42.

served in 2012, will extend to 2013. A slow return to the path of relatively rapid growth will not take place until 2014. The factors that indicate a maintained slowdown in the region's economies are deteriorating growth outlook for the eurozone countries, the prolonged process of deleveraging the private sector, or, as has been observed in recent months, an increase in tensions in global financial markets. The accommodative monetary policy pursued by central banks in this region, as well as the expected easing of consolidation should support the slow recovery in the EU 11, at least in 2014<sup>18</sup>. However, a large diversity in growth rates across the region still maintains.

Table 6. Forecasts of economic growth for the EU 11 (w %, r/r)

Specification	2012	European Commission		IMF		State sources	
		2013	2014	2013	2014	2013	2014
Bulgaria	0,8	0,9	1,7	1,2	2,3	-	-
Croatia	-2,0	-1,0	0,2	-0,2	1,5	0,7	2,4
Czech Republic	-1,2	-0,4	1,6	0,3	1,6	-0,5	1,8
Estonia	2,9	3,0	4,0	2,0	4,2	3,0	4,0
Lithuania	3,7	3,1	3,6	3,0	3,3	2,8	3,5
Latvia	5,6	3,8	4,1	4,2	4,2	3,6	-
Poland	1,9	1,1	2,2	1,3	2,2	1,3	2,6
Romania	0,7	1,6	2,2	1,6	2,0	2,0	2,5
Slovak Republic	2,0	1,0	2,8	1,4	2,7	0,6	2,3
Slovenia	-2,3	-2,0	-0,1	-2,0	1,5	-1,9	0,5
Hungary	-1,7	0,2	1,4	0,0	1,2	0,5	1,7

Source: *Analysis of the Economic Situation of Countries in Central and Eastern Europe*, National Bank of Poland, Economic Institute Office of the World Economy, July 2013, p. 64.

A model for economic growth in the countries of Central and Eastern Europe since the beginning of the transformation has been based on a large influx of foreign investment. While at the beginning of the process of integration with the European Union, and simultaneously, the gradual liberalization of financial accounts, the scale of foreign capital inflows to CEE countries has clearly increased at the beginning of the twenty-first century, especially after 2004. Its result is a strong expansion of the European financial groups. In light of the contemporary situation in the financial markets in developed countries (high liquidity, low rates of return on local investment) as well as the high potential of low-indebted households and businesses in developing countries (especially the CEE region), this group of countries has become an important direction of capital flow, mainly from the Western European banking system<sup>19</sup>.

The EU 15 region was a major source for FDI for the EU 11 countries, with wide cross country differences. Overall, in EU11, over 70 percent of to-

<sup>18</sup> Zob. szerzej: *Analiza sytuacji gospodarczej w krajach Europy Środkowej i Wschodniej*, Narodowy Bank Polski, Instytut Ekonomiczny Biuro Gospodarki Światowej, lipiec 2013, p. 6.

<sup>19</sup> Ibidem, p. 42.

tal inward FDI came from EU15 countries, while 4 percent represented intra-regional FDI inflows and 25 percent came from other countries (figure 4).

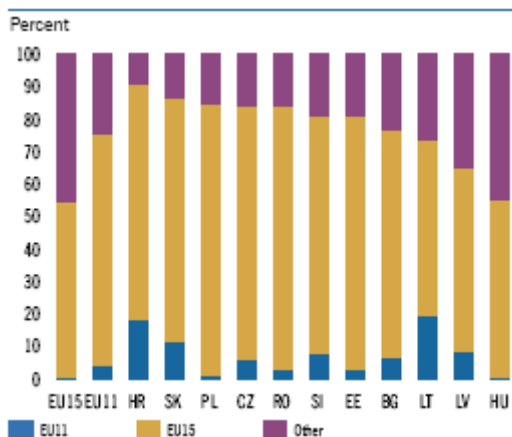


Figure 4. Share of incoming FDI in EU 11 countries by regional origin, end-2011  
Source: *EU 11. Regular economic report*, The World Bank, Europe and Central Asia Region, June 2013, p. 20.

Current effects of the global financial crisis continue to have an impact on European countries, including the EU11. Despite the slow pace of the recovery of economic activity, EU11 countries remain attractive to foreign investors due to stable economic policy, calm financial markets, and a significant level of global liquidity. The region EU11 has strengthened its competitiveness due to a faster rise in labor productivity than an increased rate of labor costs. The inflow of foreign direct investment remains stable. EU 11 countries are facing the possibility of a better use of economic opportunities in a situation of limited growth in the world, building positive trends, such as the diversification of markets and having a stable level of foreign direct investment. The countries of EU 11 have a chance to rebuild a strong economy<sup>20</sup>. However, there is a tendency toward increasing competition among the countries of Central and Eastern Europe for new investment projects.

According to the LPI, Poland received 3.43 points on a scale of 1 to 5 in 2012. Evaluations show that a number of challenges stand in the way of Polish logistics reaching the highest world standards. However, among the group of countries in Central - Eastern Europe, Poland has a leading position. For example, Slovenia took 34<sup>th</sup> position, Bulgaria – 36<sup>th</sup>, Hungary – 40<sup>th</sup>, Croatia – 42<sup>nd</sup>, Czech Republic – 44<sup>th</sup>, Slovak Republic – 51<sup>st</sup>, Romania – 54<sup>th</sup>, Lithuania – 58<sup>th</sup>, Estonia – 65<sup>th</sup>, Latvia – 76<sup>th</sup>, (table 7).

<sup>20</sup> W różnorodności siła: pozyskanie nowych rynków w UE 11, <http://www.worldbank.org/pl/news/feature/2013/06/13/diversity-new-markets-eu11-rer>, 10.07.2013.

Table 7. Number of points scored for the Polish logistics with the countries of Central and Eastern Europe, EU 11, according to the World Bank ranking in 2012

Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Poland	30	3.43	3.30	3.10	3.47	3.30	3.32	4.04
Slovenia	34	3.29	3.05	3.24	3.34	3.25	3.20	3.60
Bulgaria	36	3.21	2.97	3.20	3.25	3.10	3.16	3.56
Hungary	40	3.17	2.82	3.14	2.99	3.18	3.52	3.41
Croatia	42	3.16	3.06	3.35	2.95	2.92	3.20	3.54
Czech Republic	44	3.14	2.95	2.96	3.01	3.34	3.17	3.40
Slovak Republic	51	3.03	2.88	2.99	2.84	3.07	2.84	3.57
Romania	54	3.00	2.65	2.51	2.99	2.83	3.10	3.82
Lithuania	58	2.95	2.73	2.58	2.97	2.91	2.73	3.70
Estonia	65	2.86	2.51	2.79	2.82	2.82	3.00	3.23
Latvia	76	2.78	2.71	2.52	2.72	2.64	2.97	3.08

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 36-37.

The analysis of the data of countries in Central and Eastern Europe shows that Poland does not take a leadership position in each of the six parameters. It is a leader in the efficiency of border controls, including customs (score 3.30) as well as a leader in organizing shipments at competitive prices (International shipments score 3.47). Poland is the best in timely deliveries within the scheduled delivery time (score 4.04). According to the dimension of the quality of infrastructure in 2012, Croatia occupies a leading position (infrastructure index score 3.35). According to the logistic quality and competence (eg. carriers, customs agents) parameter, Czech Republic occupies first place (with a logistics competence index value 3.34). According to the identification and tracking parameter, Hungary has got a leading position in the region (tracking & tracing score 3.52).

With Poland's entrance to the European Union, the economic conditions of the country changed fundamentally. The Polish economy, in accordance with the concept of community, has become totally open to the movement of goods, products and services, and capital. For providers of logistics services, this meant on the one hand the dynamic increase in demand for logistics services, and on the other hand the increase of competition in the country. After 2004, Western companies began to enter the Polish logistics services market. Competition in the TSL branch increased, and this forced consolidation across the sector and the increase of the range and the quality of services provided by national companies. This was particularly noticeable in the years 2004-2008<sup>21</sup>. During this period, companies expanded their range of additional services. The percentage of companies - customers

<sup>21</sup> W. Rydzkowski, *Usługi logistyczne. Rynek usług TSL w Polsce*, UG, Sopot 2011, [www.ekonom.ug.edu.pl/pp/download.php?OpenFile=7290](http://www.ekonom.ug.edu.pl/pp/download.php?OpenFile=7290), (17.04.2013).

of large logistics services providers in Poland who choose a wide range of services and permanent contracts - increased from about 38% in 2003 to about 75% in the period of 2007-2011<sup>22</sup>. In practice, it means that companies are increasingly using logistics services in a comprehensive manner and on the basis of permanent contracts.

In 2011, Polish carriers became the leaders in international road transport in the EU. Polish carriers are better than their EU country rivals in long-distance transport from 1 to 2 thousand km and more than 2 thousand km. The transport of goods between the EU, Russia and the other republics of the former USSR constitute the majority.

Table 8. Poland in the international logistics according to LPI criteria in the World Bank ranking, 2012, 2010 and 2007

<b>Poland</b>	<b>2012</b>	<b>2010</b>	<b>2007</b>
LPI Rank	30	30	40
LPI Rank Lower Bound	25	36	-
LPI Rank Upper Bound	34	26	-
LPI Score	3.43	3.44	3.04
LPI Score Lower bound	3.27	3.25	-
LPI Score Upper bound	3.59	3.62	-
% of highest performer	77.8	78.2	-
Customs Rank	28	34	38
Customs Score	3.30	3.12	2.88
Infrastructure Rank	42	43	51
Infrastructure Score	3.10	2.98	2.69
International shipments Rank	22	35	52
International shipments Score	3.47	3.22	2.92
Logistics quality and Competence rank	32	36	38
Logistics quality and Competence score	3.30	3.26	3.04
Tracking and tracing Rank	37	33	40
Tracking and tracing Score	3.32	3.45	3.12
Timeliness rank	19	2	40
Timeliness score,	4.04	4.52	3.59

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 36; *Connecting to Compete 2010: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2010, p. 28; *Connecting to Compete 2007: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2007, p. 26-27.

For example, the logistics position of other countries in Central Europe and Eastern Europe in 2012, according to the World Bank was as follows: Bosnia and Herzegovina – 55<sup>th</sup> place, Ukraine – 66<sup>th</sup>, Serbia – 75<sup>th</sup>, Albania – 78<sup>th</sup>, Belarus – 91<sup>st</sup>, Russian Federation – 95<sup>th</sup>, Macedonia, FYR – 99<sup>th</sup>, Montenegro – 120<sup>th</sup>, Moldova – 132<sup>nd</sup> (table 9). Poland blatantly stands out in the region and occupies a higher position in logistics than other countries. It is worth mentioning that the TSL market in Poland is relatively young and very diverse. The development of logistics services in Poland was determin-

<sup>22</sup> I. Fechner, G. Szyszka (red.), *Logistyka w Polsce. Raport 2011*, Instytut Logistyki i Magazynowania, Biblioteka Logistyka, Poznań 2012, p. 120.

ed by the growing demand (including a high level of foreign investment in all sectors of the economy and the growing needs of businesses – of which the stimulating factor was the appearance of foreign companies). Another significant factor was the entry into the European logistics market, making obligatory a transfer of Polish standards to developed markets.

Table 9. Number of points scored in each category for the selected countries of Central and Eastern Europe according the World Bank in 2012

Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & trading	Timeliness
Bosnia and Herzegovina	55	2.99	2.65	2.86	3.00	2.93	2.81	3.61
Ukraine	66	2.85	2.41	2.69	2.72	2.85	3.15	3.31
Serbia	75	2.80	2.39	2.62	2.76	2.80	3.07	3.14
Albania	78	2.77	2.43	2.43	2.84	2.65	2.65	3.58
Belarus	91	2.61	2.24	2.78	2.58	2.65	2.58	2.87
Russian Federation	95	2.58	2.04	2.45	2.59	2.65	2.76	3.02
Macedonia, FYR	99	2.56	2.24	2.60	2.66	2.66	2.41	2.79
Montenegro	120	2.45	2.31	2.30	2.22	2.35	2.62	2.89
Moldova	132	2.33	2.17	2.44	2.08	2.15	2.44	2.74

Source: *Connecting to Compete 2012: Trade Logistics in the Global Economy*, The Logistics Performance Index and Its Indicators, The World Bank 2012, p. 37-38.

Foreign logistics service providers operating in Poland tend to focus on storage, distribution and logistics services with high added value, while the transport of traditional carriers are contracted locally<sup>23</sup>. In Poland, the available storage space is steadily increasing. Between 2005 and 2012 warehouse space in Poland increased from circa 2 million m<sup>2</sup> to 7 million m<sup>2</sup>. That means a 3.5-fold increase in storage space available in the country. In particular, a dynamic growth in available warehouse space took place between the years of 2006 and 2009. Since 2010, the growth rate for storage space has declined, which is related to the crisis and the economic slowdown in 2009<sup>24</sup>.

Poland has a relatively large number of intermodal terminals – containers located symmetrically across the country. The average density per area of the country is about 0.8 of a terminal for 10 thousand km<sup>2</sup> and is not significantly different than the European average (0.9 / 10 thousand km<sup>2</sup>).

<sup>23</sup> Zob. szerzej: I. Fechner, G. Szyszka (red.), *Logistyka w Polsce. Raport 2011*, Instytut Logistyki i Magazynowania, Biblioteka Logistyka, Poznań 2012; I. Fechner, G. Szyszka (red.), *Logistyka w Polsce. Raport 2009*, Instytut Logistyki i Magazynowania, Biblioteka Logistyka, Poznań 2010.

<sup>24</sup> *Rynek powierzchni magazynowych w Polsce 2012*. On point, Jones Lang LaSalle, p. 6-7, <http://magazyny.pl/raporty/rynke-powierzchni-magazynowych-i-przemysowych-w-polsce-2012>, 05.06.2013.

However, it is much lower than in countries with the largest share of intermodal transport in the railway market, such as the Netherlands – 11.9, Belgium – 7.1 and Germany – 4.1. A gradual increase in the volume and share of intermodal transport in Poland should result in the next few years, both in an increase in the number of new investment terminals, as well as in contributions to modernization, including the development and modernization of the existing infrastructure point<sup>25</sup>.

## Conclusions

The role of logistics increased during the globalization of the economy when the competition in domestic and international markets increased. Companies no longer need to independently carry out all the tasks related to logistics because a market for logistics services is functioning.

Among the global factors shaping the Polish logistics market, worth mention are: the volume of world trade and its growth rate, the growth rate of foreign investment, and the development of the outsourcing market. A measure of economic growth is TSL market, because the criteria for market growth are mainly in macroeconomic dimension.

In Poland, along with entry to the EU, a successive consolidation in the industry appears in logistics market, which influences the expansion of TSL services. In addition, a steady increase of competition in the sector helps to improve quality of service. The factors strongly favoring the development of the TSL sector in Poland are:

- a rapid growth of transport needs connected to the development of the national economy and the entry into the economic community,
- a growing importance of logistics customer service, which is becoming one of the company's competitive strategies.

The delegation of logistics tasks to the companies specialized in logistics is becoming increasingly important for industrial and commercial enterprises in Poland, and the level of outsourcing, while still lower than in Western European countries, has increased dramatically. In Poland, transport related to exchange of goods with the European countries continues to dominate. Imports and exports are the main source of transport services, and domestic services are still less than 15% of the total, including transportation to a distance of 100 km.

The logistics services market in Poland, despite its very rapid development in the last 10 years, is still lower than in the developed markets of Western Europe. However, Polish logistics looks quite positive in comparison to the countries of Central and Eastern Europe. Poland is the highest ranked country in the World Bank ranking based on the LPI index of the Central and Eastern European countries. An unsatisfactory logistics infrastructure is still a weakness for Poland. The timely delivery of consignments,

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<sup>25</sup> Urząd Transportu Kolejowego, *Analiza rynku kolejowych przewozów intermodalnych*, Warszawa, p.10.



the efficiency of border control, including customs, and the ease of organizing items at competitive prices are the strengths of Polish logistics.

The Logistics Performance Index is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and to determine what they can do to improve their performance. The LPI provides a simple, global point of reference to measure logistics performance, filling gaps in datasets by providing systematic, cross-country comparisons.

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