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Cross-border cooperation and economic  
development in border regions of Western Ukraine

Electronic Publications of Pan-European Institute 9/2007

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**<http://www.tse.fi/pei/pub>**

The author gratefully acknowledges financial support from the Academy of Finland.

## **Abstract**

The aim of the paper is to characterise the main factors of development of border regions in Western Ukraine and to find out possibilities to intensify cross-border cooperation with the EU in these regions. The study focuses on three oblasts in Ukraine – Volyn, Lviv and Zakarpattya. The new economic geography is used for the theoretical starting point to explain disparities in regional development. Comparative SWOT analysis of regional development and cross-border cooperation is used in the study. The results indicate the similarity of main development factors in observable border regions with some spatial differences. The study also shows the importance of industrial agglomeration in economic development and cross-border economic relations. The policy recommendations of the study for local governments are to give more emphasis in developing special economic zones for attracting foreign direct investments and to take active part in the renovation process of border infrastructure within the EU Neighbourhood Policy.

## **1. Introduction**

The EU enlargement and the emergence of new Europe have created a challenging opportunity to Eastern European transition countries for the support of economic and especially regional development. Peripherality is the well-known problem of border regions and there is a wide discussion in the regional development literature about the possibilities to reduce these regional disparities, several programmes have proposed for that purpose. The cross-border cooperation is one of the most recognised and discussed ways to develop border regions (Baldwin and Forslid, 1999; Brodzicki, 2002; Pitoska, 2006). The growth of international trade and technology transfer that follows foreign direct investments are also found to be very important in the development of border regions. In 2007, the European Neighbourhood Policy (ENP) started to replace former cross-border cooperation programs. One of the main goals of the ENP is to intensify cross-border cooperation between EU border regions and their neighbouring regions. Since May 2004, Ukraine had direct border connections with three EU member countries – Poland, Slovakia and Hungary. In January 2007, Romania was added to this list. The proximity of the EU creates several challenges for Ukrainian economic development.

The aim of the paper is to characterise the main factors of development of border regions in Western Ukraine and to find out possibilities to intensify cross-border cooperation with the EU in these regions.

The rest of the paper is structured as follows. In Chapter 2 the literature overview about main studies in cross-border cooperation and regional development is given. An overview of Ukraine's regional development is given in Chapter 3. Next, in Chapter 4 a study of socioeconomic development in the Volyn Oblast, the Lviv Oblast and the Zakarpattia Oblast is carried out. In Chapter 5 the SWOT analysis of the development of observable border regions is carried out and the suggestions for further development are given. Chapter 6 gives concluding remarks.

## **2. Literature review about cross-border cooperation and regional development**

The core-periphery model, the grounding of new economic geography was first introduced by Krugman (1991). It describes the interactions between increasing returns to scale of firms, transport costs and factor (labour) mobility and how they can cause and develop spatial structure of economic development. Baldwin and Forslid (1999) have integrated new growth theory with the new economic geography model suggested by Krugman (1991). They showed that growth can be destabilising force while inter-regional learning spill-over effects are stabilising. They also showed that the agglomeration of industry is enhancing growth in both core and peripheral areas.

The core-periphery theory is based on the fact that border regions are placed in peripheral regions. Erkut and Özgen (2003) analysed regional disparity of regions and countries using statistical data from NUTS II. Their conclusion is that there are significant regional differences in development and the core-periphery distribution of regions in economic development has increased after the EU enlargement. This result is also consistent with Brodzicki (2002). The border regions are found most distressed in their comparison in terms of infrastructure and economic development. They suggest that cross-border cooperation is an essential way to reduce regional underdevelopment of border regions.

Similar results were obtained by Petracos and Economou (2002) who concluded based on the analysis of economic development South-Eastern European border regions that the development gap between metropolitan regions and border regions is growing and there is need for policy actions towards enhance development and cross-border cooperation in border regions. Krätke (1998) distinguishes between low-road and high-road regional integration and stresses the importance of the quality of cross-border cooperation. He also puts the problem of regional development in the light of exogenous and endogenous impact on regional development. The study was carried out based on German-Polish border regions. The conclusion was that the regional integration tends to be low level, because no trans-border economically integrated region could be identified.

Niebuhr (2005) analyzed the effect of EU27 enlargement on the economic development of the EU border regions. A three region economic geography model was used as a starting point of the research. Regression analysis combined with the simulation technique was

use to estimate the impact of change in market access on the per capita GDP of border regions. The results indicate that the integration effects of change in market access are even stronger than predicted by the theoretical framework.

Houtum (1998) analysed the effect of state border on the cross-border economic relationships. The theoretic model was proposed to distinguish between different stages of cross-border cooperation. The main stages of cross-border relations of firms were: contact, attraction, interaction, transaction and relationship. The model was tested on large sample of firms of Dutch-Belgian border regions. The empirical results of the paper showed that the similarity and trust were are most important factors for the success of cross-border relations of firms.

Topaloglou and Petrakos (2006) have shown based on EXLINEA framework used in Northern Greek border regions that the market size of border region and close distance of a large city are important factors of cross-border trade and investment flows of a border region. This result shows a positive correlation between success in cross-border cooperation and general economic and sociologic development of a border region.

Stiller (2003) has found that there is no significant difference between level of employment and population growth in border regions and in other regions of Poland and Germany. This result is indicating that border regions do not develop significantly differently because of cross-border integration between countries.

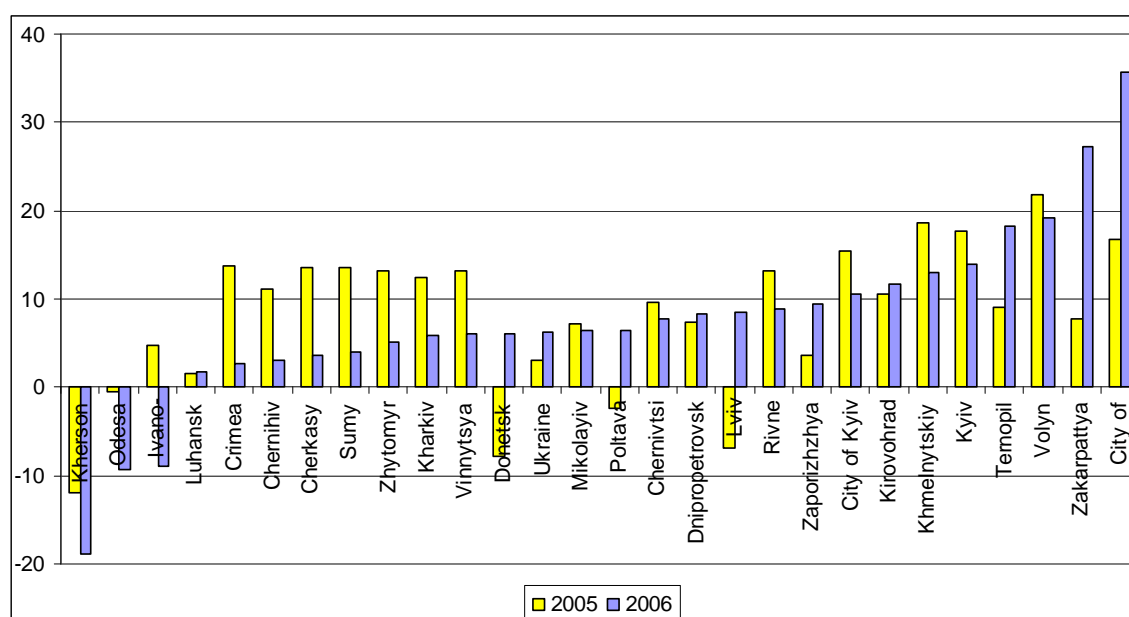
The growth triangle concept is another look on cross border regional integration. The first official growth triangle was announced in 1989 between incumbent regions in Singapore, Malaysia and Indonesia, called "Southern growth triangle". Growth triangle is a cross-border economic zone including areas from three or more countries. The main positive effects of a growth triangle are economies of scale and scope, growing agglomeration, transfer of technology, attracts foreign direct investments (Kivikari 2001).

Besides a great optimism about positive effects of EU neighbourhood programmes on the development of border regions (TACIS, INTERREG III) there are also significant considerations about effectiveness of these programmes. Pitoska (2006) discussed based

on the example of EU-Balkan cooperation that these programmes have positive but modest effect on the socio-economic development of border regions.

### 3. The indicators of regional economic development in Ukraine

Figure 1 gives information about the growth rates of industrial production in Ukraine's regions. Volyn Oblast, Zakarpattya Oblast and City of Sevastopol have high economic growth and the author suggests that the proximity of EU border contributes to their fast development. Other fast growing regions include, City of Kyiv, Ternopil, and Chernivtsi. Zakarpattya gains from the cross-border cooperation with the Czech Republic and Hungary. There are special economic zones (SEZ) formed in both Zakarpattya and Crimea. The special economic zone attracts foreign investments and enhances cross-border cooperation that contributes to economic development. Kirovohrad is another fast-growing region in Ukraine. The region is mainly agrarian. Volyn and City of Sevastopol had very significant growth of production in 2006 – more than 35%. There has been a decline of industrial production in Kherson during last two years. The growth in Kyiv region has been moderate, but very stable, with around 15% during last years.



**Figure 1: Growth of industrial production in Ukraine's regions\***

\* in %, (-) indicates decline, compared with previous year

Source: State Statistics Committee of Ukraine; author's figure.

The location of rayons at the border with the neighbouring states influences the level of social and economic development of these territories. The character of such an influence depends on the level of economic development of the neighbouring country. After all the

people living in the EU frontier territories, e.g. Zakarpattya, have more possibilities to generate additional income thanks to the local foreign economic activities, than their fellow countrymen from Chernihiv or Sumy oblasts, which neighbouring with Russia and Belarus.

Table 1: Average wages by regions of Ukraine

	January 2005 (UAH)	% of Ukraine's average	August 2006 (UAH)	% of Ukraine's average
<b>Ukraine average</b>	<b>640,9</b>	100,0	<b>1073,1</b>	100,0
Autonomous Republic of Crimea	576,0	89,9	1004,73	93,6
Vinnytsya	456,4	71,2	839,27	78,2
Volyn	450,1	70,2	795,94	74,2
Dnipropetrovsk	771,1	120,3	1166,73	108,7
Donetsk	784,7	122,4	1237,69	115,3
Zhytomyr	460,8	71,9	809,43	75,4
Zakarpattya	502,2	78,4	900,51	83,9
Zaporizhzhya	721,5	112,6	1112,2	103,6
Ivano- Frankivsk	555,5	86,7	985,79	91,9
Kyiv	651,7	101,7	1113,22	103,7
Kirovohrad	488,3	76,2	861	80,2
Luhansk	642,9	100,3	1054,57	98,3
Lviv	548,4	85,6	959,57	89,4
Mykolayiv	612,5	95,6	966,22	90,0
Odesa	640,0	99,9	978,32	91,2
Poltava	606,9	94,7	1023,16	95,3
Rivne	561,1	87,5	889,74	82,9
Sumy	507,4	79,2	923,62	86,1
Ternopil	414,9	64,7	723,12	67,4
Kharkiv	596,1	93,0	1018,1	94,9
Kherson	476,4	74,3	812,08	75,7
Khmelnyskiy	454,2	70,9	814,37	75,9
Cherkasy	486,3	75,9	874,09	81,5
Chernivtsi	476,8	74,4	860,68	80,2
Chernihiv	454,7	70,9	833,81	77,7
City of Kyiv	1024,8	159,9	1763,74	164,4
City of Sevastopol	630,9	98,4	1022,55	95,3

Source: State Statistics Committee of Ukraine; author's calculations.

As the results of the analysis show, the majority of rayons, which border on the present or prospective member countries of the European Union, have higher than average growth. On the other hand, Oblasts which are located at the border with the former Soviet

republics (Russia, Belarus and Moldova), the registered level of the social and economic development is lower. (Institute for reforms, 2005)

The other regions with higher wages include Donetsk, Dnepropetrovsk, Zaporizhzhya, and Luhansk with above than average wage level. Again, it can be included that the wages are higher in regions of industrial production. Other regions of low salaries are Vinnytsya, Volyn and Zhytomyr and Chernihiv, where the average wages make around 70-75% of Ukraine's average level. These poorest regions are all border regions. Vinnytsya is on the border of Romania, Volyn has a border with Poland and Belarus, Zhytomyr and Chernihiv have the border with Belarus. The regions of lower wages are mainly agricultural. Among the less developed regions has Volyn one of the best geographical positions as it has direct border with EU through Poland. Chernihiv may gain from the trade relations with Belarus and Russia and also from its close geographical position with Kyiv.

Recent two years saw a triumph of the resort territories of the South coast of the Crimea in the Ukrainian rayons rating. The somewhat forgotten status of the tourist Mecca of the former Soviet Union seems to have been restored in the last several years. One of the potential clusters in Ukraine is the tourism cluster in Crimea. The cluster does not yet exist formally, but there are some important steps made on that direction. Crimea Association of Travel Agencies (CATA) is formed to initiate better cooperation between tourism firms in that area. There still remain several problems: a big part of the tourism objects are in the hand of state, that is not a good manager; there is a lack of transparency among both public and private players; many tourists stay in Crimea unregistered in unofficial private accommodation places (Ukraine: competing in the global economy...2005). Nevertheless, an Autonomous Republic of Crimea has a good growth potential as a tourism cluster.

Statistics have recorded the constant growth of the number of tourists. According to the data provided by the Council of Ministers of the Autonomous Republic of the Crimea, in 2004 this indicator reached 6.3 mln people, which is 20 per cent more than the indicator for the previous year. (Institute for reforms, 2005)

Figure 2 gives an overview of the exports in regions of Ukraine in 2006. The horizontal axis presents the share of each oblast in total exports of Ukraine. The growth of exports in 2006 is measured on the vertical axis. The fastest growing regions in Ukraine are those

that are also the main industrial regions. The figure shows that Cherkasy, Luhansk and Lviv are the regions of highest export growth. Donetsk remains one of the strongest industrial regions in Ukraine, with highest share in the Ukraine's total export. Export growth of Donetsk region was rather moderate in 2006, 8%. Dnepropetrovsk region had very strong export growth of 20% in 2006 and had 19% of total Ukraine's exports. Zakarpattia Oblast, Volyn Oblast and Lviv Oblast had all more than 20% export growth in 2006, but their share in total exports remain less than 2%.

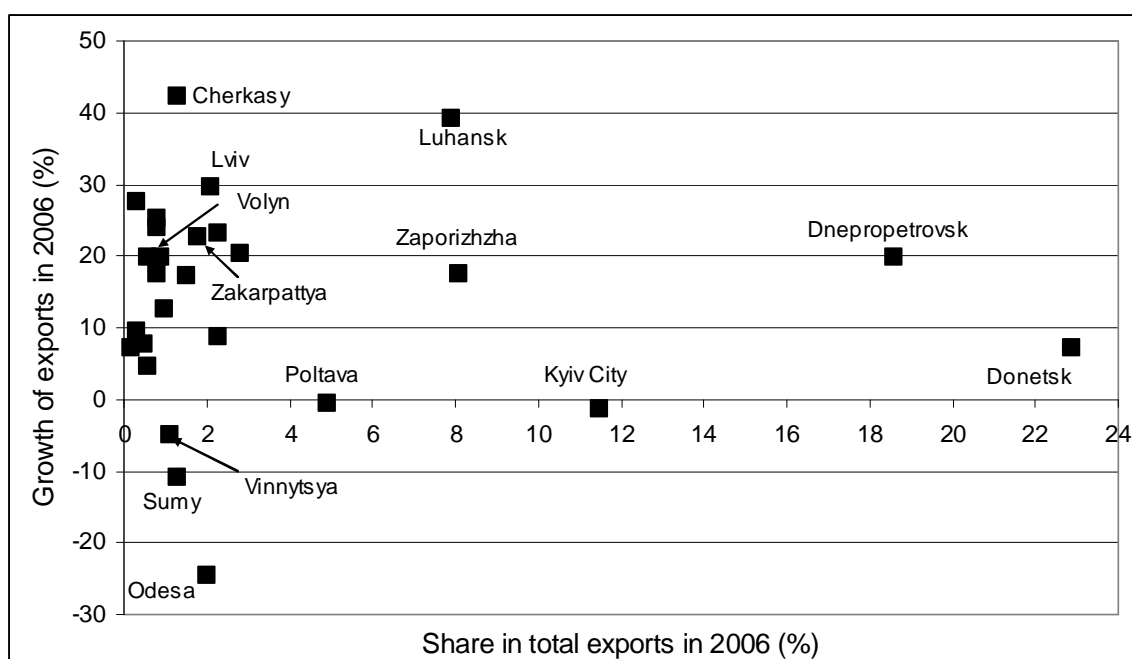


Figure 2: Regional exports in Ukraine.

Source: State Statistics Committee of Ukraine; author's calculations.

The importance of Volyn Oblast, Zakarpattia Oblast and Volyn Oblast in total export volume have increased in 2006, indicating a strengthening economic performance. The strongest regions in exports, namely Donetsk, City of Kiev and Poltava, have all somewhat lost their share in total exports of Ukraine due to low export growth in 2006.

There is an ongoing research about the effects of special economic zones (SEZ) in transition economies. Ahrens and Meyer-Baudeck (1995) has pointed out, that SEZs are aimed to promote FDI, to enhance and diversify the production of export goods and to import modern technologies. There are several SEZs formed in Ukraine.

FDI inflow tends to be concentrated into large industrial centres. About one third of total FDI goes to Kyiv City. Other more attractive regions for FDI are Dnipropetrovsk Oblast,

Kyiv Oblast, Odesa Oblast, Donetsk Oblast and Zaporizhia Oblast. Among Western Ukraine's border regions, Lviv Oblast is the only significant target region for FDI with 4% of total FDI into Ukraine.

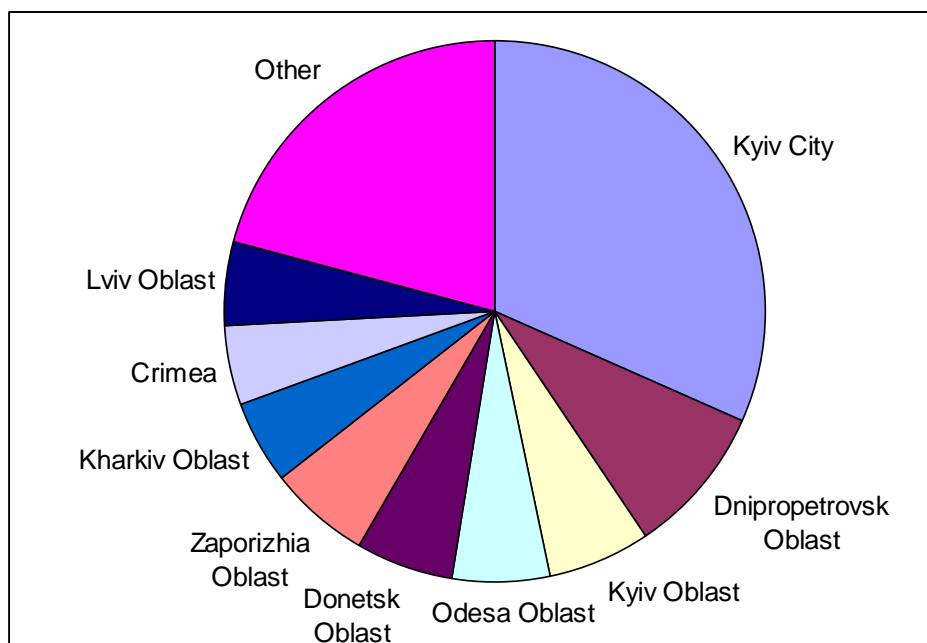


Figure 3. FDI distribution by regions in 01.01.2005.

Source: Institute for reforms, 2005.

Until 31 December 2006, EC assistance to the countries of the European Neighbourhood Policy is provided under various geographical programmes including TACIS (for our eastern neighbours and Russia) and MEDA (for our southern Mediterranean neighbours), as well as thematic programmes such as EIDHR (European Initiative for Democracy and Human Rights). For the current budgetary period (2000-2006), the funds available were approximately €5.3 billion for MEDA and €3.1 billion for TACIS, as well as approximately €2 billion in European Investment Bank lending for MEDA beneficiary countries and €500 million for TACIS beneficiary countries. From 1 January 2007 onwards, as part of the reform of EC assistance instruments, the MEDA and TACIS and various other programmes is replaced by a single instrument – the European Neighbourhood and Partnership Instrument. (European Commission, 2007)

Cross-border cooperation under this Regulation shall be carried out in the framework of multi-annual programmes covering cooperation for a border or a group of borders and

comprising multi-annual measures which pursue a consistent set of priorities and which may be implemented with the support of Community assistance (hereinafter joint operational programmes). The joint operational programmes shall be based on the strategy papers of each country. (European Commission, 2006)

The timescale of European Neighbourhood Policy is for 2007-2013 and a financial envelope of EUR 11 181 000 000 will be provided for the program. 95% of the budget will be allocated to country and multi-country programmes, and 5% of the budget will go directly to cross-border cooperation programmes (European Commission, 2006).

The EU-Ukraine Action Plan was jointly adopted at a special Cooperation Council on 21 February 2005. It is based on the PCA and an important step towards the overall process of developing the increasingly close relationship between Ukraine and the EU, going beyond co-operation, to gradual economic integration and a deepening of political co-operation. The Action Plan, which has been concluded for a period of 3 years, provides a comprehensive and ambitious framework for work with Ukraine, identifying all the key areas of reform. (European Commission, 2006)

The EU-Ukraine action plan foresees cooperation in several socio-economic and political fields and also declares the form of development of cross-border cooperation between EU and Ukraine. The specific aims in cross-border cooperation are:

- Provision of support to the regions and participation in the preparation and implementation of the Neighbourhood Programmes involving Ukraine.
- Ensure development and implementation of efficient legislation on cross-border and regional co-operation.
- Increase effectiveness of projects and programmes in the sphere of cross-border and regional co-operation by providing active support and involvement of the local and regional level (European Commission, 2006)

The EU is the largest donor to Ukraine. Total assistance since 1991 amounted to more than €1 billion. This includes technical assistance through the TACIS programme, macro-financial assistance, and humanitarian assistance. TACIS assistance in the area of nuclear safety alone amounted to almost €260 million over 1991-2003. Assistance also includes the Fuel Gap programme and a major contribution to the Chernobyl Shelter Fund managed by the EBRD.

The main objectives of the TACIS programme are to reinforce democracy and the rule of law and to promote the transition to a market economy in the partner countries of Eastern Europe and Central Asia. Ukraine participates in the YOUTH programme which promotes people-to-people contacts and co-operation between actors of civil society, such as associations and NGOs in the youth field. Regarding higher education, Ukraine is eligible for participation in the Community programmes Tempus and Erasmus Mundus.

## 4. The overview of border regions in Western Ukraine

### 4.1. Volyn oblast as a border region

The Volyn oblast is situated in the North-West Ukraine. The Volyn oblast has the borderline with Poland and Belarus. The geographic position of the region favours the cross-border cooperation with the European Union and CIS countries.

The total population of the Volyn oblast as of 1 August 2006 was about 1 mln. The total migration of the region has been positive during January-September 2006 unlike many other regions of Ukraine.

There are nine border crossings operating in Volyn. The modernization and renovation of border crossings is one of the priorities of the local government. Four border crossings are used for goods clearance at the Ukrainian-Polish border (Investment Attractiveness...).

The growth of industrial production was remarkable 37% in the first half of 2006 (Table 2). High economic activity is seen also from 71% of growth in bank loans and around 20% of growth in retail trade. The amount of unemployed persons fell by 6%.

Table 2. Selected economic indicators of Volyn Oblast

	1.07.2006	Growth (%)
Industrial production (% growth comp with previous period		37,1
Import (mln USD)	279	180
Export (mln USD)	138,3	0,2
FDI inflow (mln USD)	18	260
GDP (in 2000 prices)	450,8	6,7
Bank credit (mln UAH)	2085,3	71,3
Unemployed (th)	23,3	-5,9
Retail trade (mln UAH)	1027,9	19,7
Monthly wage (UAH)	806,7	33,4
Agricultural production		6,7
Total population (mln)	1,039	

Source: Statistical office of Volyn oblast, State Statistical Committee of Ukraine, 2006

Volyn has is well endowed with forest, land and recreational resources. The Ukraine's most perspective deposits of copper have been found in the region with capacities of 7 mln tons. In the northern part of the region deposits of phosphates have been found.

More than 55% of the industrial production of the region comes from food and food-processing industries. The machine-building, chemical and building materials industries are also well developed. An important part of the industrial production comes from wood industry and especially furniture industry that is an important export article of the region.

Table 3 gives more detailed overview of industrial production growth by different industries. There was a significant drop in the mining industry, especially the mining of energy materials decreased by almost 30% in the first half of 2006. At the same time, there has been a very significant growth in forestry and pulp and paper production, where the growth has been more than 100%. The growth of chemical production was more than 16% and the chemical industry plays an important role in Volyn's industrial production.

Table 3. Growth of industrial production in Volyn by type of activity

<b>Industry</b>	January-June 2006 compared with same period in 2005 (%)
<b>Total industrial production</b>	37,1
<b>Mining industry</b>	-28,7
mining of energy materials	-29,5
mining of non-energy materials	2,1
<b>Manufacturing and processing</b>	39,1
food and agricultural	0,8
light industry	-4,5
forestry	102,3
pulp and paper	102,0
chemical industry	16,5
production of non-metal minerals	3,5
metallurgy	1,0
machine building	96,4
other	54,4
<b>Production and distribution of electricity</b>	4,6

Source: Statistical Office of Volyn oblast, 2006

There are considerably big differences of economic growth within the Volyn oblast Table 4 gives an overview of industrial production growth in Volyn sub-regions (rayons) in the first half of 2006. Kamin-Kachirck Rayon had highest growth of industrial production (127%), while the largest drop (77%) in industrial production was experienced in Ivanici Rayon.

Table 4. Growth of industrial production in rayons of Volyn Oblast

Rayon	Growth of industrial production (%)
Kamin-Kachirck	127%
Lokachin	74%
Kiverciv	69%
Kovel	34%
Manev	16%
Lutsk	14%
Ratnyv	6%
Ljubomyl	2%
Starovyziv	-2%
Ljubechiv	-11%
Rozichen	-19%
Volodimir-Volyn	-26%
Tury	-33%
Chack	-33%
Gorohiv	-65%
Ivanichi	-77%

Source: Statistical Office of Volyn oblast, 2006

Volyn has foreign frontier 330 km, including 135 km with Poland and 195 km with Belarus. The 9 customs transition territories are located in Volyn: Ustilug, Yagodyn, Izov, Rymachi, Domanovo, Dolsk, Pishcha, Pulemets and Zabolottya.

The total export of Volyn oblast in the first quarter 2006 was USD 56,7 mln and import USD 160,3 mln. The import growth compared with the same period in 2005 was remarkable 20,9%, while export growth amounted only for 1,1%. The economic subjects of Volyn had trade relations with 59 countries, production was exported into 43 countries and Volyn imported goods and services from 48 countries. The export of Volyn oblast accounted 0,7% and import 1,9% of Ukraine's total in January-March 2006.

The majority of goods (58%) were exported into the EU member countries (33 mln USD), more than 25% of export went to CIS countries (16,9 mln USD). Russia was the largest single export market for Volyn oblast (9,4 mln USD), followed by Germany (8,5 mln USD) and Romania (5,9 mln USD). Neither Poland nor Belarus were among the top export markets for Volyn companies.

The main export articles of Volyn in the beginning of 2006 were machinery, electronics, wood products, oil products and metals.

Substantial part (45%) of imported goods to Volyn came from Russia (73,4 mln USD), the import volume from Korea was 29,3 mln USD (18%) and from Poland 17,1 mln USD (10,6%), Germany 7,8 mln USD and from Belarus 5,9 mln USD (3%).

The import structure was dominated by transport machines, oil and oil products, electronics. There were 160 exporting firms in Volyn during first quarter of 2006 and 248 importing firms respectively. Both export and import of the region was concentrated to the oblast centre Lutsk.

According to local government authorities of Volyn the priority fields for attraction the foreign direct investments are:

- modernization of the agro-industrial sector
- machine building, wood-working, light and chemical industries
- technological improvement of local enterprises
- environmental protection
- tourism and recreational complex

The Volyn Oblast has intense cooperation with the Lubelskie Voivodship. Since 1995 the leading institution which initiates and manages the international cooperation projects in this part of Europe has been the Bug Euroregion. The cooperation has become tighter after the EU enlargement in 2004.

The development of international collaboration is facilitated by various types of national organizations. In 2005 a national organization "Derzzowniszinform" was established, of which the major function has been to inform foreign institutions on companies interested in economic partnership. (Youth of innovation, 2006)



Figure 4. The map of Lubelskie Voivodship and Volyn Oblast.

The cross-border cooperation between the neighbouring regions of Ukraine and Poland (and Belarus) is substantially financed by the EU program INTERREG IIIA/TACIS CBC (EU Neighbourhood Policy). The project aims to develop border regions of EU and its neighbours. In 2005 an extensive project on international cooperation for small and medium companies was realized. And the development of border infrastructure has recently been particularly attended to. The Jagodzin, Morowicz-Kryzypow and Adamczuki-Zabrzeze border crossings were modernized in 2005. A Polish and Ukrainian trans-national agency was established as well. The bordering areas of Volyn and Lublin regions are major participants of the Poland-Ukraine-Belarus neighbouring project. Within the project its actively operating component is the European Center for Integration and Government Cooperation “House of Europe” in Lublin, which promotes government cooperation in the neighbouring regions. A Volyn social organization “Our Cause” established the Center for European Integration in Lutsik. (Youth of innovation, 2006).

#### 4.2. Lviv oblast as a border region

Lviv Oblast is situated in the western Ukraine. The regional capital of the oblast is Lviv City. The total population of the region is about 2.6 mln. The industrial production growth of the region has been relatively high compared with other regions in Ukraine. The exports growth has been 37% in January-September 2006 compared with the same period in 2005, clearly exceeding total exports growth in Ukraine (Table 5).

Table 5. Selected economic indicators of Lviv Oblast

	<b>Volume</b> January – September 2006	<b>Growth</b> January- September 2005 – January-September 2006 (%)	<b>Ukraine</b> <b>total/average</b> <b>growth</b>
Industrial production (% growth comp with previous period		6,4	5,5
Import (mln USD)	786,3	18	22,2
Export (mln USD)	594,6	37	10,4
FDI inflow (mln USD) January-June 2006	51	112,5	200
FDI stock (mln USD) 01.07.2006	431,6		108
GDP (in 2000 prices) (2005) mln USD	2765		
GDP per capita (2005)	1070,6		
Retail trade (mln UAH) (Jan-July 2006)	3564,9	13,8	26,1
Average monthly wage (UAH)	893	31,9	31,4
Agricultural production		7,9	-2,8
Construction (mln UAH)	1234,1	21	7,6
Total population (mln)	2,57		

Source: State Statistics Committee of Ukraine; author's calculations.

There has been moderate but altogether positive growth in the mining industry of Lviv Oblast in January-October 2006 (Table 6). The growth of energy materials was 8% but the decrease in the mining of non-energy materials was more than 36%. The production in metallurgy industry grew by remarkable 49%. Other fast growing industries are machine building (16%), pulp and paper industry (13%) and chemical industry (11%).

Table 6. Growth of industrial production in Lviv Oblast by type of activity

Industry	January-October 2006 compared with same period in 2005 (%)
<b>Total industrial production</b>	7,8
<b>Mining industry</b>	6,4
mining of energy materials	8,1
mining of non-energy materials	-36,2
<b>Manufacturing and processing</b>	8,4
food and agricultural	4,0
light industry	-1,1
forestry	0,4
pulp and paper	13,0
chemical industry	10,7
production of non-metal minerals	8,1
metallurgy	48,5
machine building	16,3
other	13,7
<b>Production and distribution of electricity</b>	1,2

Source: Statistical Office of Lviv Oblast.

The annual FDI inflow into Lviv Oblast has been quite stable around \$50 mln (Figure 5). Therefore the FDI stock has increased steadily over past five years.

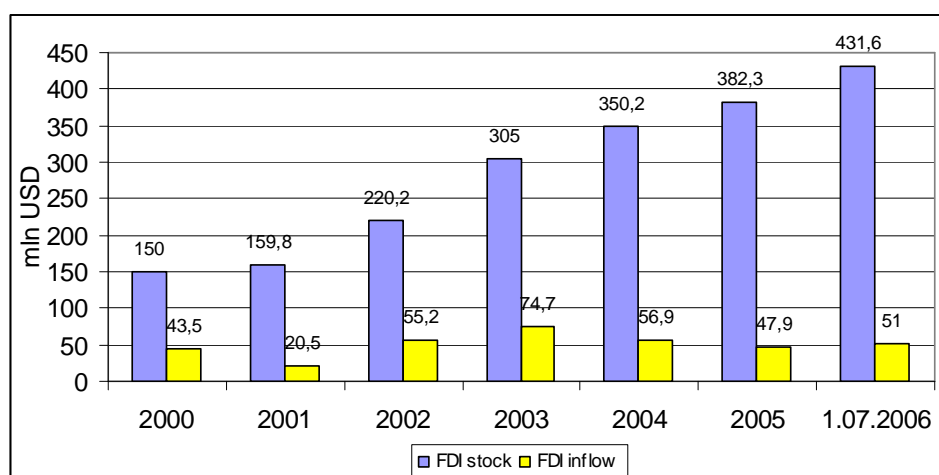


Figure 5. FDI to Lviv Oblast

Source: Statistical Office of Lviv Oblast.

The more attractive sectors for foreign investors are machinery, food industry and the financial sector. Together, about half of FDI is invested into those three industries.

Significant investments are made also into real estate sector, forestry, transport sector and light industry (Figure 6).

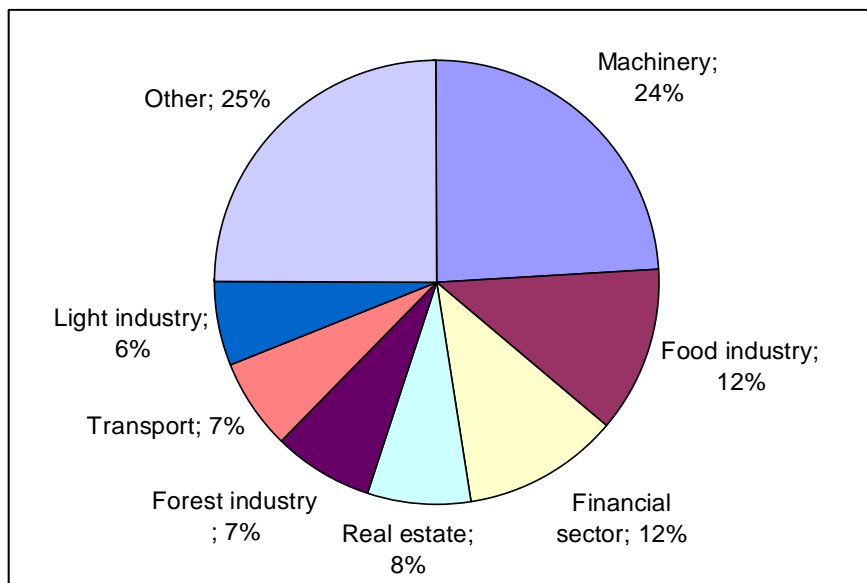


Figure 6. Distribution of FDI stock in Lviv oblast by economic activity (01.07.2006)  
Source: Source: Statistical Office of Lviv oblast; author's calculations.

Main trade partners of Lviv Oblast are given on Figure x. Germany, USA, Denmark, Virgin Islands and Poland are more important exports markets for firms in Lviv Oblast. Polish and German dominate in Lviv Oblast's imports. Other important importers are from Russia, Italy and Check Republic. The direct foreign neighbours of Lviv Oblast play important part in the foreign trade of the region (Figure 7).

United States Agency for International Development conducted a research about Ukrainian-Polish cross-border trade in 2005. The main objective of the study was to analyze the possibilities to improve trade relation of Ukrainian-Polish small and medium sized enterprises (SME-s). The study focused on possible implementation of information and communication technologies (ICT) on border crossings to speed up border procedures. Several interviews were carried out with truck drivers and border officials to receive a direct feedback from border crossings and find out the main obstacles. Border crossing at Rava-Ruska (Lviv oblast) was visited more closely.

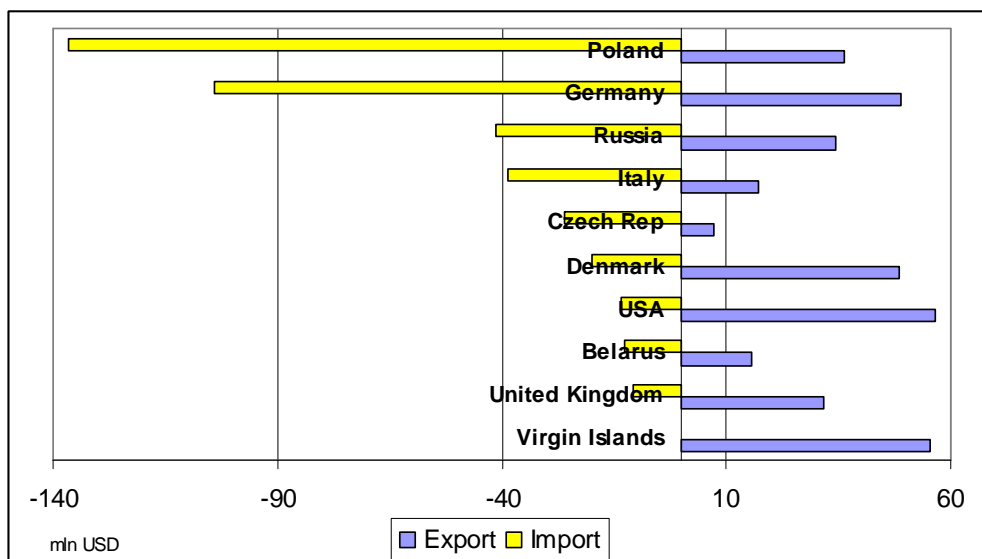


Figure 7. Main trade partner countries of Lviv oblast January-July 2006. Negative values present imports.

Source: Statistical Office of Lviv oblast.

The trade through Rava-Ruska crossing is at low level, but the main problem is that there are not enough traffic lanes at the border. There are no passing lanes and trucks have to park at the main lane blocking traffic for other vehicles. The study concluded that the level of trade between Ukraine and Poland is low, but increasing, creating additional need to develop border crossings. The role of SME-s in Ukraine's international trade is still modest. The main problem for trade between Ukraine and Poland is an outdated institutional framework and lack of ICT usage at border clearings. The clearings have excessive use of paper work. Every truck driver has to present six invoices and no electronic verification is available. The most important way for verification is the use of stamps and even the original handwritten signatures are not always sufficient. The development of computer systems and the implementation of internet are seen as an urgent way to improve border clearings at Ukraine side. (USAID, 2005)

The potential for cross-border co-operation between Lviv Oblast and Poland has increased with the entry of Poland into the EU. Presently, about one-third of the total FDI inflows into the Lviv Oblast originated in Poland. With the foreign firms located in Poland expecting a rise in wage levels, some of them are likely to relocate some activities (e.g. labour-intensive activities) to the Lviv Oblast, as the German company Leoni did. Such relocation may evolve a division of labour between the two regions, further increasing cross-border trade and investment flows. In spite of a great potential for cross-border co-operation,

there may be several challenges to actually achieving it. Such challenges arise from the following:

- Both regions are relatively less developed compared to some other parts of Ukraine and Poland. As a result, they may compete for attracting foreign investments, particularly the FDI seeking low-cost locations.
- The European Union's legislation on 'Rules-of-Origin' to get duty-free access to EU markets may actually reduce the cross-border FDI and trade flows, as one region is within the Union and the other outside of it. This may also reduce the emergence of a division of labour between the two regions.
- With Poland's entry into the EU, Ukrainian citizens may face some visa- and work permit related problems to enter Poland. This is likely to reduce the contact between the people and businessmen of the two regions.] (OECD, 2005)

#### ***4.3. Zakarpattya oblast as a border region***

Zakarpattya Oblast is located at North-Eastern Carpathians in the South-Western Ukraine. The total population of the region is about 1.25 mln. The region capital is Uzhhorog with population of 117 thousand. Zakarpattya Oblast includes 13 districts. Major part (about 86%) of the oblast is mountains area. The Oblast has direct border with Hungary, Poland, Romania and Slovakia. Most of the population are employed in the agrarian sector and forestry.

The industrial production growth in January-September 2006 of the Zakarpattya Oblast was 10,5% compared with the same period in 2005, being twice higher than Ukraine's total industrial growth during that period.

The growth in exports was almost 12%, that is slightly higher than Ukraine's average growth in exports. Trade balance of the region has worsened as the import growth has been more than 30%. There was a 3% decline in retail trade in Zakarpattya region, while the total growth in Ukraine was as high as 26%. There was also a decline in construction activity, indicating rather cool economic activity in the region.

Table 7. The main economic indicators of the Zakarpattya Oblast

	<b>Volume</b> January – September 2006	<b>Growth</b> January- September 2005 – January-September 2006 (%)	<b>Ukraine</b> <b>total/average</b> <b>growth</b>
Industrial production (% growth comp with previous period)		10,5	5,5
Import (mln USD)	638,9	30,3	22,2
Export (mln USD)	467,1	11,8	10,4
Retail trade (mln UAH) (Jan-July 2006)	1540,3	-3,1	26,1
Average monthly wage (UAH)	837,4	34,3	31,4
Agricultural production		1,9	-2,8
Construction (mln UAH)	302,1	-6,0	7,6
Total population (mln)	1,24		

Source: State Statistics Committee of Ukraine; author's calculations.

Agency of Regional Development and Cross-border Co-operation "Transcarpathia" has prepared a strategic plan for developing cross-border cooperation in Zakarpattya region in 2004-2011. The main strategic aim is to reduce peripheral situation of the Zakarpattya region and to support the integration with border region in neighbouring countries.

## **5. Comparative SWOT analysis of development factors**

Next, the comparative SWOT analysis is conducted to analyse main factors of development in border regions of Western Ukraine. The main strengths, weaknesses, opportunities and threats for border regions are discussed. Detailed tables of the SWOT analysis are given in Appendix 1 (Table 8). Cross-marks in Table 8 represent the importance of a SWOT factor for a border region. The SWOT analysis was conducted for four areas: economic development; domestic and international cooperation; technology and innovation; infrastructure. Below the SWOT factors from different areas are discussed together.

### *Strengths*

Western regions of Ukraine are rich in land, cheap labour force and raw materials. The industrial development is stronger in Lviv and Volyn Oblast. There is a growing interest of potential foreign investors. Compared with other regions, Lviv Oblast has better diversification of enterprises, while Zakarpattya has better support system for SMEs. Good cross-border relations are present in the all three oblasts. Lviv City is the only strong metropolitan center among three observable oblasts, giving Lviv Oblast competitive edge in terms of business attractiveness. The telecommunication infrastructure is well-developed in all three regions. There is comparatively well developed transport infrastructure in Volyn Oblast and Zakarpattya, but it absolute terms the infrastructure need improvements in all regions of Western Ukraine. Regions in Western Ukraine are “western-minded” and keen to cooperate with the EU. The Lviv City is in the UNESCO World Heritage and is very suitable for sentimental and cultural tourism. From technological point of view there are relatively well developed telecommunication systems, especially in Lviv and Zakarpattya regions. All three regions are strong in creating technology and innovation centers. Lviv region has more developed university network.

### *Weaknesses*

There are many weaknesses for the development in the regions Western Ukraine, many of the weaknesses are typical for border regions. There is high unemployment, especially in Lviv Oblast and Zakarpattya Oblast. The migration is high and there is a decline in active population. There are many weaknesses that are common in all three oblasts, related with the general economic environment and development in Ukraine. The political and

economic conditions in Ukraine are unstable and unpredictable. The abortive capacity to utilise the potential of the EU projects is low in all three oblasts. The industrial sector is not innovative and lacks competitive assets. Poor development of border crossings infrastructure is another obstacle for developing cross-border cooperation. Nevertheless, some important work in that field has been done already. Especially the Volyn Oblast and Zakarpattya Oblast and their cross-border neighbouring regions remain peripheral. All three regions are in lack of skilled people and financing in tourism sector and there is too low level of marketing for the tourism. Lviv and Volyn regions have also environmental problems. Main weaknesses in the field of technology and innovations are poorly financed innovation and technology system and poor technological equipment of universities.

### *Opportunities*

There are several opportunities and challenges that border regions in Western Ukraine may use in advantage of their development. Both, opportunities and threats for the development are very similar in all three oblasts. The main opportunities include expansion of high-tech industries utilising local innovation potential and labour; development of SMEs; enlargement of business support by regional and local administration; expansion of clusters in strong industries; more efficient use of the EU financed programmes; emergence of new economic opportunities through cross-border cooperation; enhancing oblast centers as significant urban centers; constructing joint border checkpoints with the EU countries; fast and rationale privatisation. In tourism sector all three Oblasts have potential for tourism development, cross-border joint tourism attractions. In the field of technology and innovation, all three regions have very similar opportunities, namely support from regional government; development of international contacts; support from the EU programs; link between FDI and R&D and development of advanced telecommunication infrastructure.

### *Threats*

A serious threat to economic development in Western Ukraine and in whole Ukraine comes from unstable economic and political situation of Ukraine. There is also threat that the structural reforms are slow and inefficient and the corruption persists. There can be too strong competition from national and international centers in terms of business attractiveness and investments. The WTO membership in the future has unclear and

possibly negative effect to some industries in Ukraine, at least in short run. Skilled labour force is attracted by centers and foreign countries. There is also a threat that the disparity with the EU neighbours is increasing and the technology gap between the neighbouring regions and the Western regions of Ukraine is too big for efficient cross-border cooperation. Threats for tourism development can be the introduction of Schengen visa regime and further pollution and too low financing of environmental programs. In the field of technology and innovation the main threats are same for all three regions: access to innovations and technologies is difficult for SMEs in rural areas; unfavourable fiscal policy of national governments; lack of financial resources for new technologies; stagnation of academic institutions and R&D in Ukraine; domestic and international brain drain from science and marginalisation of Ukrainian science in international scientific networks.

#### *Suggestions for further development of border regions*

Some possible solutions to enhance the development of cross-border relations are suggested below.

- To increase central state support while keeping existing regional management of cross-border cooperation between border regions. The state support would be important for tourism development and reconstruction of tourism attractions that would create better investment climate also for private tourism firms. Tourism-related infrastructure is very important to develop by local authorities. The author finds that it is crucial to retain the local management of cross-border cooperation projects, but it is likely that local governments' budgets do not allow for substantial support for tourism development and central aid is required.
- The author suggests reconsidering possibilities to attract foreign investments. All three border regions have strong agricultural sector. The observable regions are rich in high quality agricultural land enabling to produce raw materials for food industry. The problem is that the production technology in agricultural sector is rather outdated and FDI would help to introduce modern and competitive technologies in agriculture and food industry. Cheap local labour force and cheap raw materials with high technological level of foreign food processing firms could create competitive edge for border regions. Reduction of unemployment would be another positive effect of employment obligations.

- Common cross-border projects for developing roads and border infrastructure. A significant work in that field has already been done as this is the field, where substantial financing comes from the EU Neighbourhood Programme. Many border checkpoints have been renovated during last years. Author finds that is essential to systematically renovate all main border check-points, because the condition of border infrastructure is one of the key elements in developing cross-border economic relations.
- Closer cooperation between academic institutions and regional authorities. All three regions have stressed the academic infrastructure and network between regions. At the same time there is a lack of personnel managing the EU financed projects. The author suggests that the local governmental units should more cooperate with academic institutions and to integrate them into common cross-border projects. Close cooperation with academic institutions is also important to improve the technological level of firms in the region and increases the absorptive capacity and ability to learn from foreign enterprises.
- Reconsidering services and benefits of SEZs, to make them even more attractive. Although SEZs are offering several benefits for foreign firms they may not be enough to encourage international firms to produce there because of high international cooperation for attracting FDI. The author suggests considering to reduce income and profit taxes to zero per cent for some period and to replace them with investment obligations and employment of local labour. There is a strong trend in Europe towards reducing corporate income taxes and it could be worthwhile to consider following these trends at least in SEZs to be competitive. The establishment of a joint technology park would be one possible solution to attract FDI into border regions.
- Environmental collaboration between the regions. Pollution does not stop at any state border and the cross-border cooperation in that field is required to maintain purity of nature in the regions.

## 6. Conclusions

In theoretical literature we find many discussions about how cross-border cooperation contributes to development of border regions. At the same time border regions generally suffer from peripheral status and even cross-border cooperation often remains less intensive than are the opportunities. The three Western Ukrainian border regions discussed within the paper are not exceptions. Lviv Oblast is clearly less peripheral because of important regional center – Lviv City. Volyn Oblast and Zakarpattia Oblast lack attractive regional centre and this fact reduces also the overall attractiveness of those regions.

The economic growth in border regions has been higher than Ukrainian total growth, that is a positive indication of development. All three border regions were also relatively successful exporters with higher than average export growth. The share of exports of border regions in total Ukraine's export is below 2% for each border Oblast, in that point of view border regions remain peripheral. All three border regions are mainly agrarian regions. Many cross-border cooperation initiatives have been started to support cross-border cooperation between neighbouring border regions.

There are several strengths, weaknesses, opportunities and threats of regional development in border regions of Western Ukraine. The SWOT analysis showed that the regions are quite similar, having very similar opportunities and threats. There are some regional differences in strengths and weaknesses between regions. Zakarpattia Oblast and Volyn Oblast suffer from the lack of big regional center. All three regions are well-endowed with cheap and well-educated labour force, raw materials and agricultural land.

The author suggests that the development of infrastructure for trade and tourism should be in top priorities of the border regions. The current shape of roads and border crossings is quite below modern standards. Academic institutions should be more integrated into regional planning to increase the absorptive capacity and better manage financial aid from the EU Neighbourhood Programme. Environmental collaboration is also a very important field for future cross-border cooperation. In general, the author finds that border regions in Western Ukraine have lot of unused potential for future development.

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## Appendix 1.

Table 8. Comparative SWOT factors

SWOT variable	Volyn	Lviv	Zakarpattya
<b>ECONOMIC DEVELOPMENT POTENTIAL:</b>			
<b>Strengths</b>			
- Growing interest of potential investors	X	X	X
- Good industrial and agricultural development in:	X		
- Automotive industry	X	X	
- Food industry	X		
- Wood processing	X		
- Mechanical engineering	X	X	
- Instrument making		X	
- Own energy resources and raw materials	X	X	X
- High diversification of enterprises		X	
- Cheap and well-educated labour force	X	X	X
<b>Weaknesses</b>			
- High migration and decline of active population	X		X
- High unemployment		X	X
- Decreasing quality of agricultural land	X		
- Excessive use of energy in industry	X		
- Obsolescence of industrial and agricultural assets	X	X	X
- Low level of innovation in industries	X	X	X
- Poor development of SMEs	X	X	
- Slow privatisation and too great importance of state firms		X	
- Low cash flow and unfavourable structure of incomes	X	X	X
- Low diversification in export structure		X	
- Unfavourable business environment (unstable taxes, high corruption, long bureaucratic procedures, poor business support)	X	X	X
- Low access to credit		X	X
<b>Opportunities</b>			
- Ukraine becoming the member of WTO	X	X	X
- Expansion of high-tech industries utilising local innovation potential and labour	X	X	X
- Rapid development of SMEs	X	X	X
- Fast and rationale privatisation	X	X	X
- Enlargement of business support by regional and local administration	X	X	X
- Decrease of unemployment	X	X	X
- Support from international development organisations and EU	X	X	X
- Inflow of innovative FDI	X	X	X
- Expansion of clusters in strong industries	X	X	X
<b>Threats</b>			
- Unstable economic and political situation in Ukraine	X	X	X
- Lack of structural changes and reforms	X	X	X
- Unwillingness of regional elite to undertake modern view of development	X	X	X
- Persisting corruption	X	X	X
- Too strong competition from national and international economic centres („curse of periphery”)	X	X	X
- Low absorption capacity of EU funds	X	X	X
- FDI concentration to low-tech industries	X	X	X
- High energy prices	X	X	X

- Uncertain effect of WTO membership	X	X	X
- Collapse of cooperative movement in agriculture because of lack of state support	X	X	X
- Forests overexploitation	X		
- Skilled labour force leaves the country	X	X	X
<b>INTERNATIONAL AND DOMESTIC COOPERATION</b>			
<b>Strengths</b>			
- Well developed SME support network			X
- Traditional good cross-border contacts	X	X	X
- Access to EU programmes (Phare, TACIS, EU Neighbourhood Policy)	X	X	X
- Spill-over effect of rapid development of neighbouring EU countries	X	X	X
- Existence of attractive region centre		X	
<b>Weaknesses</b>			
- Insufficient level of lingual and business skills at entrepreneurs		X	
- Insufficient transport and border-crossing infrastructure	X	X	X
- Low level of utilisation of opportunities of international cooperation	X	X	X
- Weak performance of the Euroregions	X	X	X
- Chernobyl affected areas	X		
- Peripheral location with respect to EU and national centres	X		X
<b>Opportunities</b>			
- Close position of the EU, gateway from East to West	X	X	X
- Efficient use of EU financed programmes	X	X	X
- Development of international cooperation	X	X	X
- Emergence of new economic opportunities through cross-border cooperation	X	X	X
- Efficient cooperation with other regions of Ukraine	X	X	X
- Practical implementation of common cross-border programmes	X	X	X
-			
<b>Threats</b>			
- Introduction of visa Schengen regime	X	X	X
- Peripheralisation of Western Ukraine within the socio-economic space of Ukraine	X	X	X

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## TECHNOLOGY AND INNOVATION POTENTIAL

### Strengths

- |  |   |   |   |
|--|---|---|---|
| - Relatively well developed telecommunication system                             |   | X | X |
| - Functioning of universities in all target frontier regions                     |   | X |   |
| - Creation of research and innovation institutions                               | X | X | X |
| - Existing links between business and research institutes                        | X |   |   |
| - Core of R&D institutions in high tech sectors (engineering, instrument making) | X |   |   |
| - Several scientific establishments are well connected with world science        |   | X |   |

### Weaknesses

- |   |   |   |   |
|---|---|---|---|
| - Poor traditions within the sphere of theoretical and applied research         |   |   | X |
| - Insufficient financing of research from state and international organizations | X | X | X |
| - Poor technical equipment of academic institutions                             | X | X |   |
| - Weak contacts between business and R&D  |   | X |   |

### Opportunities

- |  |   |   |   |
|--|---|---|---|
| - Support from regional government                         | X | X | X |
| - Development of international contacts                    | X | X | X |
| - Support from the EU programmes                           | X | X | X |
| - Link between FDI and R&D                                 | X | X | X |
| - Innovation for energy savings                            | X | X | X |
| - CBC in R&D   | X | X | X |
| - Development of advanced telecommunication infrastructure | X | X | X |

### Threats

- |   |   |   |   |
|---|---|---|---|
| - Access to innovations and technologies is difficult for SMEs in rural areas | X | X | X |
| - Unfavourable fiscal policy of national governments                          | X | X | X |
| - Lack of financial resources for new technologies                            | X | X | X |
| - Stagnation of academic and R&D in Ukraine                                   | X | X | X |
| - Domestic and international brain drain from science                         | X | X | X |
| - Marginalisation of Ukrainian science in international scientific networks   | X | X | X |

## CULTURAL INTEGRATION AND TOURISM POTENTIAL

### Strengths

- |   |   |   |   |
|---|---|---|---|
| - „Western minded” people   | X | X | X |
| - Historic old city of Lviv in the UNESCO World Heritage register   |   | X |   |
| - Potential for sentimental and religious tourism                   |   | X |   |
| - Large recreational natural resources (woods, lakes)               | X |   |   |
| - Border localisation   | X | X | X |
| - Ecologically clean region   |   |   | X |
| - Status of development priority in all Carpathian region countries |   |   | X |
| - Experience in cross-border tourism projects                       |   |   | X |

### Weaknesses

- |   |   |   |   |
|---|---|---|---|
| - Lack of border crossing points for pedestrians and bicycles |   | X | X |
| - Lack of marketing   | X | X | X |
| - Lack of skilled personnel                                   | X | X | X |
| - Lack of financial resources for tourism development         | X | X | X |
| - Insufficient number of hotels of various standards          | X | X |   |
| - Ecological problems   | X | X |   |
| - Insufficient infrastructure of environmental protection     | X | X |   |
-

-	Obsolescence of existing sanatoria	X		
<b>Opportunities</b>				
-	Development of sentimental tourism		X	
-	Efficient international promotion of Ukraine and its regions	X	X	X
-	Improvement of the ecological situation	X	X	
-	Improvement of tourism infrastructure	X	X	X
-	Plantation of forest on degraded areas	X		
-	Development of marketing concepts for regional tourism products	X	X	X
-	Common cross-border approach towards tourism development	X	X	X
<b>Threats</b>				
-	Danger of environmental pollution	X	X	X
-	Non-coordinated actions of different border territories	X	X	X
-	Introduction of Schengen regime	X	X	X
-	Reduction of investment for ecology and environment protection	X	X	X
<b>INFRASTRUCTURE</b>				
<b>Strengths</b>				
-	Well developed telecommunications system	X	X	X
-	High capacity of transport communications (roads, railway)	X		X
<b>Weaknesses</b>				
-	Weak urban network	X		
-	Weak agrarian infrastructures	X		
-	Insufficient housing	X		
-	Insufficient public services	X	X	X
-	Insufficient transport and border crossing infrastructure		X	X
-	Low technical and technological level of the whole infrastructure	X	X	X
-	Insufficient quantity of 1st level roads			X
<b>Opportunities</b>				
-	Cross border passages and major road axes for SEZs	X	X	X
-	Enhancing oblast centres as significant urban centres	X	X	X
-	Constructing joint border checkpoints with the EU countries	X	X	X
-	Utilization of EU financed programmes	X	X	X
<b>Threats</b>				
-	Absence of a regional metropolis	X		
-	Increasing disparity with EU neighbours	X	X	X
-	Insufficient financing of infrastructures	X	X	X
-	Technical stagnation of development	X	X	X
-	Information isolation of the border regions	X	X	X

Source: Compiled by the author.

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