

## Resilience of Pomorskie region to economic crisis

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**Abstract.** Economic resilience is defined as the ability of the economy to overcome the negative external shocks. It depends on macroeconomic factors and internal conditions of the country or region. Macroeconomic factors include fiscal policy, economic and monetary policy. Among the internal factors economic structure, the level of restructuring and modernization of enterprises, competitiveness and innovation should be mentioned. Among the important soft internal factors level of human capital, including entrepreneurship can be distinguished. The aim of the paper is to present the issue of economic resilience and explain what are the main factors constituting resilience of Pomorskie region (voivodship) in Poland. To achieve this aim, authors first give a theoretical introduction regarding the economic resilience concept as well as describe the methods of economic resilience measurement. Secondly the macroeconomic, external factors affecting the analysed region are discussed. Next the authors measure resilience of Pomorskie region basing on statistical data and compare the resilience of Pomorskie region with other regions in Poland. At the and the authors, basing on extensive interviews with experts, representatives of regional business and administration, attempt to explain why Pomorskie region is more resilient to economic crises than other Polish regions. In this part Pomorskie economy structure is presented too.

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## 1. Introduction

The concept of resilience is derived from environmental studies, and describes biological capacity to adapt and thrive under adverse environmental conditions (Christopherson et al., 2010: 3). The concept has been transferred to the social sciences and public policy as the good way of identification of responsive capacities of places and social systems to global threats such as economic crisis, climate change and international terrorism (MacKinnon, Driscoll Derickson, 2013). As a result of the recession of the U.S. and Europe economies, this concept began to be rapidly developed in economics and regional science. Therefore the economic resilience concept is more and more significant in international studies.

Economic resilience refers to “the policy-induced ability of an economy to recover from or adjust to the negative impacts of adverse exogenous shocks and to benefit from positive shocks” (Briguglio et al., 2009: 233). In economics, resilience has been defined in terms of return to a fixed and narrowly defined equilibrium (as measured by employment, for example) or, in the more liberal version, multiple equilibria (Christopherson et al., 2010: 3). Similarly, regional resilience can be defined as “an ability of a region to anticipate, prepare for, respond to, and recover from a disturbance” (Foster, 2007: 14). Hill et al. (2008: 4) see resilience as “the ability of a region ... to recover successfully from shocks to its economy that either throw it off its growth path or have the potential to throw it off its growth path”.

In the research of economic resilience an evolutionary approach is proposed (Simmie, Martin, 2010), in which one assesses changes in the economy during and after the recession. Martin (2012) suggests that there are four interrelated dimensions to regional resilience: resistance, or the differential ability of regions to resist disruptive changes such as recessionary shocks; recovery, or the ability of a region to recover effectively from shocks; re-orientation or the extent to which the region changes its eco-

nomonic structure; and finally, renewal, or the degree of change to the pre-shock growth path or trajectory.

A characteristic feature of the definitions is the existence of external factors as contributing to the recession or slowdown in the economy. It is also stressed that internal characteristics of regions or countries (including the structural conditions) affect the depth, duration and speed of recovery from the recession.

Apart from the economic resilience concept that is discussed in this paper, there is also another concept of spatial adaptation present in geographical literature. The concept of spatial adaptation have been proposed in 70s of 20<sup>th</sup> century (see Walker, 1975) and developed by Smith (1995), Stryjakiewicz (1999), Markowski and Marszał (1999). The concept referred to strategies of enterprises as a respond to changing external conditions on the market, especially in the conditions of transforming economies of post-socialist countries.

The concept of spatial adaptation seems to be less extensive than the concept of economic resilience. The first concept refers to the strategies of enterprises responding to changing conditions on the market (May, 2008; Czaplinski, 2010), while concept of economic resilience refers to wider, and more complex changes of regional economy. Moreover the concept of economic resilience encompasses not only production sector, but also service sector (Navarro-Espigares, Martín-Segura, 2012) as well as role of regional administration and other public entities (Chu, 2013). Sagan and Masik (2013) argue that the concept of economic resilience encompasses also social aspects (entrepreneurship, qualifications of labour force), demographic like migrations, structural aspects (diversified economic structure) and the role of place (strong developing agglomeration and its transportation links).

In this article, concept of economic resilience is used because the authors go beyond analyses of strategies of enterprises, and look at regional economy from wider perspective. The authors analyse various aspects, including political, social, demo-

graphical that make regional economy stable despite unstable macroeconomic conditions.

According to (Briguglio et al., 2009: 229) the resilience is determined by: macroeconomic stability, fiscal deficit, inflation and unemployment, external debt, microeconomic market efficiency (including the efficient market mechanisms), good governance (appropriate government intervention to foster economic resilience), developed and responsible society, with a high level qualifications and good health. In contrast to the resilience the same authors define the economic vulnerability as “exposure of an economy to exogenous shocks, arising out of economic openness”. They also suggest that the vulnerability is affected by economic openness, export concentration, dependence on strategic imports.

S. Christopherson et al. (2010: 6-7) point out that, in the context of the economic resilience, there are several, universal factors of particular importance that allow regions to adjust and adopt to changing conditions over time. These are: (a) a strong regional system of innovation (Clark et al., 2010); (b) strength in factors that create a ‘learning region’ (Archibugi, Lundvall, 2001); (c) a modern productive infrastructure (transport, broadband provision, etc.); (d) a skilled, innovative and entrepreneurial workforce; (e) a supportive financial system providing patient capital; (f) a diversified economic base, not over-reliant on a single industry.

Economic resilience to the crisis stems from structure and the function of the national/regional system and its international links. The ability of the economy to respond to external impulses can be equated with the ability of public institutions and companies to make quick decisions, and therefore rapid changes that can favour preserving the stability of development. The activities of the public at national level come down largely to the appropriate economic and fiscal policy of the state, monetary policy of the central bank and the necessary reforms. Decisions taken by companies concern an appropriate level of investment. Decisions taken by customers concern a level of consumption.

## 2. Material and research methods

There are three main data sources used in this research. First - desk research resulting in description

of macroeconomic factors affecting economy of Pomorskie region. A review of the literature also allowed to identify critical industries and their share in production, employment and export of the Pomorskie region. Second - statistical data, which has been employed to measure resilience index that enabled authors to compare resilience of Pomorskie region to other regions in Poland. Third - qualitative research involving more than thirty interviews of entrepreneurs, representatives of business support institutions, local and regional administrations, academics and NGOs activists. Interviews conducted in spring 2013 made it possible to identify macroeconomic factors, mostly responsible for the stabilization of the country's and regional economy during the crisis in Europe. The interviews also helped to identify features of Pomorskie region economy and society that promoted resilience of this region to the crisis.

Economic resilience is measured by variety of indicators. The most commonly used include Gross Domestic Product, Gross Value Added, disposable income, sectoral employment, productivity, workforce, employment, number of enterprises/start-ups, business in highly exporting sectors, innovations and qualification levels. The most important measures that allow to compare the resilience of regional and national economies to the crisis are employment and GDP (Fingleton et al., 2012; Briguglio et al., 2009).

Due to limited accessibility of high quality data enabling comparison at level of NUTS 3, the authors employed the following five indicators that describe region's resilience to the crises: Gross Domestic Product per capita, employment rate, disposable income, number of national economy entities and income from selling innovative goods on foreign markets. Above mentioned indicators not only refer to economic aspects of the resilience, but also describe social context (employment rate, disposable income). What is more, a number of national economy entities reflects entrepreneurship level of regional community, and income from selling innovative goods on foreign markets may reflect qualifications of regional labour force. The changes of above mentioned indicators in Pomorskie region and other regions of Poland have been examined.

On the basis of the five chosen indicators resilience index has been calculated as follows: firstly,

value of change expressed as a percentage for the region has been divided by the maximum value, the average for each of the regions was calculated (see Gołembski, 1999; Runge, 2007).

In the case of employment rate, number of national economy entities and income from selling innovative goods on foreign markets the decline was recorded. In order to eliminate negative values, the value equal to minimum was added. The obtained values allowed to keep the primary differentiation among regions, expressed as a percentage. The index value equal to 1 would mean that resilience has achieved the highest rates compared to other regions. A value of 0 would mean that the region has achieved the lowest rates. Values close to 1 for the regions mean that they proved to be more resilient to the crisis than the regions with values very close to 0.

### 3. Results

#### 3.1. Macroeconomic factors

The fiscal and economic crisis in the United States and Western Europe has not caused a recession in Poland, although there was a real threat of note two quarters consecutive with a decrease in gross domestic product. The Polish economy has proved to be more resilient to the crisis than not only the neighbouring countries of Central and Eastern Europe, but also then Southern Europe and even Western Europe. Therefore it is worth asking question, what are the reasons?

In the Polish public debate, it is emphasized that a significant external factor affecting the stability of the economy are European funds. The inflow of funds invested mainly in infrastructure contributed to increase of turnover in the economy, which enabled it to increase even during the crisis in Europe. Another important factor, supporting the resilience of the economy, which is often overlooked, was the introduction of so-called Vienna Initiative (The Economist, 2013). This initiative based on a voluntary agreement of banks aimed at streamlining operations in crisis. This action has enabled to suppress western banks against massive drain of capital from their branches in Central Europe.

Another key factor contributing to economic resilience was a 'healthy' banking system in Poland as

a result of conservative policy pursued by the sector, including a good relation of loans to deposits and relatively low lending in foreign currencies. Important for positive GDP growth was weakening of the Polish currency as a result of the global financial crisis and the outflow of capital to developed countries. Depreciation of the currency made Polish companies more competitive by selling goods on world markets at lower prices than before the crisis (Rachwał, 2011).

Interviewed representatives of the regional institutions and businesses a high level of domestic consumption recognized as a key factor to maintain economic growth in Poland and Pomorskie region. This was despite the incessant media reports on the crisis in Europe. Only since the end of 2012, the level of consumption began to fall.

Countercyclical fiscal policy of Polish government has undoubtedly contributed to mitigation the financial crisis negative effects. During the economic boom in the years 2003-2007 the budget deficit fell from over 6% of GDP to less than 2%. During the economic downturn in 2011, increased again to almost 8% of GDP. In 2012, the budget deficit fell to less than 4% of GDP (GUS, 2014). Among the other public activities that enabled to stabilize economy in the first wave of the crisis, the monetary policy should be pointed out. In the years 2008-2009 deposit interest rate determined by the National Bank of Poland fell from 4.5 to 2%. In 2010-2012 the deposit rate increased from 2 to 3%, but in 2013 again dropped to 1%. Interviewed economists emphasized that lowering the interest rate has encourage banks to increase financing of the real economy.

During the second wave of the European crisis Polish economy was more vulnerable to external negative impulses than during the first wave of the crises. This is due to National currency is stronger than in the first wave of the crisis, ending infrastructure projects financed from European funds from the budget for the years 2007-2013 and decreasing domestic consumption (NBP, 2013).

#### 3.2. Comparison of the Pomorskie economy to other Polish regions

Main economic factors illustrating condition of Pomorskie economy in recent years shows that Pomor-

skie region was relatively more resilient to economic crises than other Polish regions. During the years 2007-2012 employment rate in Poland increased by 2.3%. The largest increase in employment was recorded in Pomorskie (almost 12%) and in the regions of Silesia (Śląskie – industrial region), Mazovia

(Mazowieckie – Warsaw region) and Kujawsko-Pomorskie (Table 1). Table 1 shows that employment rate increased not only in the regions traditionally considered as economically strong (Śląskie, Wielkopolskie), but also in Kujawsko-Pomorskie and Zachodniopomorskie.

**Table 1.** Changes of selected indicators in Polish voivodships

Voivodship	Increase <sup>a</sup> of GDP per capita <sup>b</sup>	Employment rate change <sup>c</sup>	Disposable income change <sup>b, d</sup>	National economy entities change <sup>c</sup>	Change of the share of net revenues from the sale of innovative products for export <sup>c</sup>
	%				
Dolnośląskie	18.2	-5.1	9.2	8.5	10.0
Kujawsko-Pomorskie	8.5	6.5	3.4	-0.3	6.3
Lubelskie	12.7	-0.9	6.7	8.7	-7.9
Lubuskie	8.3	-7.6	3.8	1.2	19.9
Łódzkie	13.3	-4.0	3.4	-2.9	31.9
Małopolskie	11.4	1.6	10.6	14.4	-18.0
Mazowieckie	15.4	6.7	13.7	10.3	-107.3
Opolskie	9.0	-0.7	5.8	3.9	18.7
Podkarpackie	12.7	-0.7	3.9	8.4	-115.9
Podlaskie	11.7	2.0	4.9	6.4	-25.6
Pomorskie	10.0	11.8	9.5	12.2	20.4
Śląskie	12.6	7.5	7.8	5.8	-65.5
Świętokrzyskie	11.1	1.4	4.1	1.1	-3.0
Warmińsko-Mazurskie	11.5	-6.3	7.3	5.7	-278.2
Wielkopolskie	12.9	4.5	8.6	9.2	21.5
Zachodniopomorskie	9.6	3.5	5.8	2.9	-85.8
Poland	12.2	2.3	8.1	7.3	-28.9

Explanation: a – calculation based on data in Euro; b – data for the years 2007-2010; c – data for the years 2007-2012; d – income corrected for cumulative inflation rate

Source: Own's elaboration based on Eurostat (2013) and GUS (2014) data

The employment rate depends on the condition of the regional economy, its structure, the level of competitiveness, and the level of entrepreneurship in relation to other economies. Also the continuous improvement of work organization in companies helps to avoid negative consequences on labour market during crisis. Interviewed experts claim that this modernization, made before the European crisis and low labour costs, caused that many of job positions were saved in Poland, as opposed to most European countries. What is more, the increase in the number of employees in Poland during the crisis in Europe can be associated with an increase in

cost competitiveness of Polish economy which resulted from weakening of the Polish currency. Interviewed experts however underlined that higher growth of employment in some regions, including Pomorskie, than the national average can be associated with an increase of competitiveness through technological upgrading of enterprises enhanced to some extent by the EU funds. This can be connected with an increase in infrastructure investments co-financed from the EU funds which enabled to preserve workplaces in construction sector.

Differential results were observed in regions if we take into account the increase in GDP per capita



(Table 1). The largest increase was recorded in the regions of Dolnośląskie (Lower Silesia; over 18%), Mazowieckie and Łódzkie. Economies of those regions grew much faster than Polish economy as a whole (average GDP growth per capita was 12.2%). Regions lacking large and strong metropolitan areas grew slower than national average. Pomorskie region, where GDP growth reached 10%, falls to this group, despite the highly populated and economically strong Gdańsk metropolitan area which is the core of the region. According to interviewed experts, this could lead us to the conclusion that Gdańsk metropolitan area does not use its resources as good as it could. This can be related to peripheral location of the metropolitan area and lack of capacity of public institutions to attract significant investment to the region. The distance from Western markets, including German (less commercial contacts) could affect the slower growth of the examined region too.

We can observe that disposable income of households increased in all examined regions, reaching 8,1% as Polish average. The highest values of examined indicator have been recorded in Mazowieckie (13.7%), Małopolskie (10.6%) and Pomorskie region (9.5%). The average disposable income of households is strongly and positively associated with both employment rate and wages. This could suggest that competitiveness of Pomorskie economy was to less extent associated with low work force costs than with other factors.

When we take into account a change of number of national economy entities, Pomorskie is again among leading regions in Poland. The increase of national economy entities in Pomorskie reached 12.2%, while Polish average was 7.3%. Increase of national economy entities is to high extent caused by increasingly common self-employment. Instead of employing a new worker, companies prefer to contract services with one-man businesses. This tendency is particularly present in large scale urban agglomerations. Increase of national economy entities reflects flexibility of the economy and its ability to adopt to harsh external conditions by reduction of labour costs.

The share of revenues from the sale of innovative products for export was the only analysed indicator that dropped. The Polish average was -28.9%. Pomorskie region is one of few where high increase

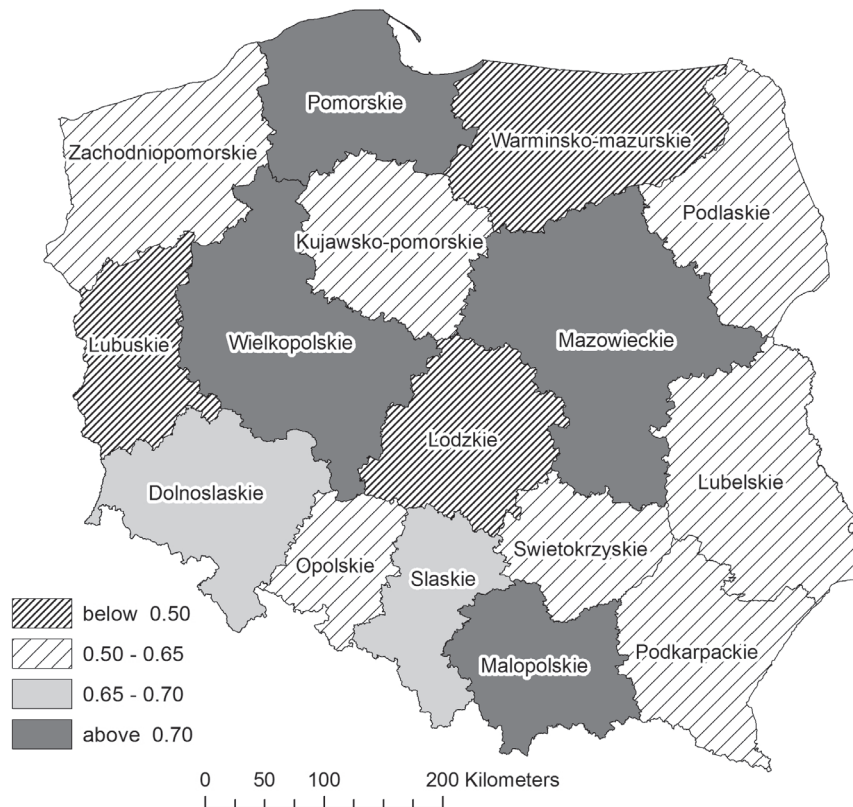
of revenues from the sale of innovative products for export has been recorded. The higher increase have been recorded only in Małopolskie region (31.9%). Golejewska (2012) claims that before the crises, higher expenditures on R&D and higher level of employment in R&D sector has been recorded in mentioned regions than elsewhere. There are three regions where outstanding decrease has been recorder. These are Warmińsko-Mazurskie (-278.2%), Podkarpackie (-115.9%) and Mazowieckie (-107.3%). According to (Dominiak, Churski, 2012) a high level of socio-economic development of regions is strongly associated with level of innovations, which in turn affects resilience of regional economies to crises

The combination of analyzed indicators enabled the authors to construct the index of economic resilience. The economic resilience above the average is observed in Pomorskie, Mazowieckie, Małopolskie, Wielkopolskie, Dolnośląskie and Śląskie region (Table 2 and Fig. 1). Pomorskie proved to be more resilient to economic crises than any other Polish region, including highly industrialized Śląskie region and Mazowieckie, the capital region. What is important, there are strong and developing urban areas in all mentioned regions, including Warsaw, Cracow, Katowice, Wrocław and Gdańsk.

**Table 2.** Resilience index of regions in Poland

Voivodship	Resilience index
Pomorskie	0.82
Mazowieckie	0.78
Małopolskie	0.74
Wielkopolskie	0.73
Dolnośląskie	0.68
Śląskie	0.65
Poland	0.63
Lubelskie	0.62
Podlaskie	0.57
Opolskie	0.52
Podkarpackie	0.50
Kujawsko-Pomorskie	0.50
Swietokrzyskie	0.50
Zachodniopomorskie	0.50
Łódzkie	0.43
Lubuskie	0.39
Warmińsko-Mazurskie	0.35

Source: Own's elaboration based on Table 1



**Fig. 1.** Resilience index of regions in Poland

Source: Own's elaboration based on Table 2

The most vulnerable regions to the crises are Warmińsko-Mazurskie, Lubuskie and Łódzkie. Both Warmińsko-Mazurskie and Lubuskie are lacking large scale urban areas able to generate high added value jobs which is not favourable to resilience during the economic crisis. Whereas Łódzkie region where Łódź, the third largest city in Poland is located is undergoing large scale structural changes. The collapsing textile industry is currently replaced by electronic industry, largely involving simple assembly of electronic products. This long-lasting process makes Łódzkie region vulnerable to economic crises.

Stability of employment (or increase) indicates the resistance to external shocks, similarly GDP growth and others. It should be noted, however, that employment in the public sector is generally not a subject to cyclical fluctuations as much as in the private sector. Thus, the ratio of employment in both sectors also affects the resilience during the economic slowdown or recession. Regardless to the

reasons of the stability of the level of employment it should be noted that the regions where employment is not falling are recognized as more resistant to external shocks. Similar objections can be raised to the GDP. Its growth can arise due to external public transfers (e.g. public investments) or a significant increase in the debt of the public sector including local and regional governments. Similarly as employment, growth of GDP in regions and other used indicators, indicates its resilience.

### 3.3. Determinants of internal resilience in Pomorskie region

Economic resilience of regions to economic crises is lined to the share of invulnerable (stable) sectors in regional employment structure or structure of regional GDP. G. Gorzelak (2009) lists several invulnerable sectors of Polish economy that remained stable despite the European economic crises. These

were food sector, advertising industries, outsourcing sector and retail sector. Bank and financial sector were pointed as most vulnerable to the crises, but nevertheless those sectors did better in Poland than in Western countries. This was due to efficient operation of the Financial Supervision Commission, slightly-developed investment banking and conservative banking policy - limited offer of complex financial products and good relation of loans to deposits. The other sectors pointed by Gorzelak (2009) as vulnerable were construction sector, real estate market, automotive sector, IT sector, transportation sector, metallurgical sector textile sector and tourism sector.

The sectors of most significance for the Pomorskie region economy remained relatively resilient to economic crises in Western Europe. These were petrochemical, pharmaceutical, paper and food sector. In Poland, those traditional production sectors remained stable in the first stage of the crises. This was mainly due to stable consumption of basic goods in the beginning of crises (Rachwał, 2011). Health and education sector, which are also of great importance for Pomorskie region economy stayed stable due to the fact that these sectors are not very much dependent on economic cycles. Tourism sector, which is also crucial for Pomorskie region economy remained also stable. This was due to predominance of domestic tourists that drive this sector in Pomorskie.

Interviewed representatives of regional authorities emphasized that there were several sectors of Pomorskie region economy that turned out vulnerable for external shocks. These were the exporting sectors, strongly linked with foreign markets, i.e. shipbuilding sector, IT sector, furniture sector, financial sector and fish processing sector. The sectors most affected by the loss of demand on international markets were IT sector and to less extent furniture sector.

Local or regional origin of companies of construction sector, food sector, shipbuilding sector, petrochemical sector, pharmaceutical sector and furniture sector made them less vulnerable to external shocks. The companies of listed sectors are managed by local or regional leaders and have advantage of highly skilled local workers. The companies representing IT and paper sector located in Tczew or Kwidzyn are managed from foreign head

offices which make those companies more vulnerable for external shocks.

Logistics and transportation sector have been developing in Pomorskie region despite those sector are known as vulnerable for economic crises. This was mostly due to large scale investments that made Gdansk and Gdynia ports more attractive for worldwide transportation companies. The most important turn in that respect was opening a Deep Water Container Terminal in Gdansk which is able to operate the largest container vessels in the world. This made Gdansk a transportation hub linked directly with ports of China and enabled Gdansk to compete with ports of Hamburg or Rotterdam.

Vulnerability to the external shocks, unlike the resilience, is strongly related to the economic openness (Briguglio et al., 2009) which can be measured as the ratio of international trade to GDP. Pomorskie is one of leading regions in Poland, when to take into consideration openness of its economy. *Strategia Rozwoju Województwa...* (2012: 10) points out that "the region is economically opened which is proofed by high share of export in region's GDP structure (3<sup>rd</sup> place in Poland) and high share of high technology products in the structure of export (2<sup>nd</sup> place in Poland)". We can also read in cited publication that Pomorskie region is extraordinary vulnerable to external economic shocks.

High share of export in region's GDP structure is not favourable to its resilience to the external shocks. Export of Pomorskie region however, consists mainly of high technology products which are exported to the relatively economically stable regions and countries (e.g. Germany). What is more, although Pomorskie region is relatively economically opened in comparison to other Polish regions, its openness to foreign markets is much smaller than openness of regions in Western Europe. Thus we can conclude that weak economic links of regions in Poland, including Pomorskie, prevented those regions from decrease of employment and GDP during the first wave of economic crises.

According to the OECD classification, Pomorskie region export comes from so called medium low technology sectors, however in comparison to other Polish regions, Pomorskie exports relatively technologically advanced products. The high share of low technology products exported from the region accompanied by rising production costs can pose



a threat to the pace of recovery from the recession in the event of a crisis in the future.

Pomorskie region export is mostly directed to EU member states (more than 60% of export) including economically stable countries i.e. Germany, The Netherlands, Sweden, and Denmark. What is interesting, the share of export directed to non EU member states is much higher in Pomorskie region (more than 30%) than in other Polish regions. United States and Norway are the non EU states of the greatest importance for Pomorskie region export (Handel zagraniczny województwa..., 2008). The Export of Pomorskie region is diversified, what makes Pomorskie region economy less vulnerable to the external shocks.

Many interviewed entrepreneurs underline that Small and Medium companies, are of crucial importance for Pomorskie region economy. Small businesses are more flexible than large scale companies and are able to respond to the market changes faster than international entities, where decisions are made in distant head offices. Often, the decisions made there do not take into account economic efficiency of their remotely located branches and/or economic situation of given country or region. A high share of small and medium companies in Pomorskie region economic structure can foster economic resilience of the region.

Representatives of NGO's emphasizes that Pomorskie is one of the most entrepreneurial regions in Poland. Pomorskie region is the third in Poland when we take into consideration the number of enterprises per thousand inhabitants. We can also observe a high number of newly registered enterprises in Pomorskie region (2<sup>nd</sup> place in Poland) when comparing to other regions in Poland. The entrepreneurship ratio used in Raport o stanie... (2011), shows that Pomorskie region is the second entrepreneurial region in Poland after leading Mazowieckie region.

It is usually underlined that ability of companies to compete and their innovativeness are favourable to economic growth of a region (Markowska, 2012) and to its resilience during the economic crisis (Christopherson et al., 2010). Pomorskie region share of innovative companies is small, just as in other regions of the country. A share of medium and large companies in Pomorskie region is relatively small when comparing with other regions of

the country. This may affect the innovativeness level of companies in the region, as medium and large companies play most crucial role in the transfer of innovative technologies from foreign countries (Świadek, 2012). What is more insufficient economic benefits from the cooperation of research centres with business and insufficient incentives for entrepreneurs cause little companies engagement in R&D processes, including improving innovation.

The competitiveness of production in Pomorskie region, as in other regions of the country, is mainly caused by low labour costs (and hence the low prices of products) and not technological innovation of finished products. At the present stage of development, however, Pomeranian companies can sell their products to external markets due to low labour costs. Currently, situation of this kind strengthens the competitiveness of Pomorskie region economy. In the long run, when labour costs is inevitably increasing this factor would have less and less importance.

An example of placement of foreign companies branches in Gdańsk and Gdynia is a rapidly growing sector of the BPO (business process outsourcing). With lower labour costs in Poland (including in Pomorskie) than in Western Europe, Polish workers provide sufficient qualifications for the sector.

In the long run, demographic and social conditions also affect resilience of regions to economic crises. According to interviewed experts, high level of entrepreneurship, spatial and occupational mobility favour economic resilience of the Pomorskie region. Liberal attitudes, independence, lack of demanding attitudes in society foster economic competitiveness which in turn affects resilience of regional economy to the crises.

Pomorskie region is one of four Polish regions including Mazowieckie, Wielkopolskie, and Małopolskie, where positive net migration has been recorded for number of years (GUS, 2014). Listed regions are also known as most economic resilient (Fig. 1). Inflow of relatively young and active migrants favour competitiveness of the region and makes the region more resilient to external economic shocks.

Highly skilled and well educated workforce is also of a great importance for building economic resilience of the region. In Pomorskie highly skilled shipbuilding sector workers enhanced specialization

of this sector. Business representatives suggested that this resulted in extensive collaboration of regional shipbuilding and yacht manufacturing companies with foreign partners. The most tight links are kept among Pomeranian and Scandinavian companies of this sector. Highly skilled workers are also advantage of Pomeranian companies of petrochemical sector, energy sector, pharmaceutical sector, and furniture sector. The quarter of Pomeranian student are those studying technical courses. This makes Pomorskie region one of leading in Poland in that respect (Szymtkowska et al., 2010). Study courses related to maritime sectors and health sector are also of great importance for regional economy.

Population of Pomorskie region is known as one of most active in the social sphere, when comparing with other Polish regions. The number of NGOs per capita is high above Polish average. Social capital of Pomorskie region is also much higher than many other Polish regions, but still medium when comparing with regions of Western countries. Pomorskie is a leading Polish region in respect of quality of life index, which means that people living in this region are more happy and satisfied than people living in other Polish regions (Czapiński, Panek, 2011). Social activity of Pomorskie region population can be also illustrated by political commitment. The turnout in the parliamentary election of 2011 in Pomorskie region was much higher than in majority of Polish regions (second place in Poland). Relatively young population of Pomorskie region is more liberal than population of other Polish regions. In mentioned elections, the liberal party - Platforma Obywatelska gained score reaching 51%, in Pomorskie region. This was the highest score of this party in Poland (Państwowa Komisja Wyborcza, 2014). Liberal attitudes are typical for young populations, which can adopt to changing economical and social circumstances, have high qualifications, are entrepreneurial and are not afraid of losing privileges. These features indicate flexibility of communities and favour building of resilience to external shocks.

#### 4. Conclusions

The macroeconomic external factors including fiscal policy of government and monetary policy of

central bank affect the economic resilience of the region. Counter-cyclical government policy and low deposit interest rate determined by the National Bank of Poland favoured maintaining jobs and economic growth during the downturn. Moreover, behaviour of the banking sector, including maintaining high liquidity was of great importance too. Conservative policy of this sector based on financing the real economy caused that relatively few companies went bankrupt.

Studies conducted in Pomorskie allow us to conclude that the resilience of the region compared to other regions in the country is high. Macroeconomic factors were of great importance for the growth of the economy in the first wave of the crisis have. During the second wave of the crisis, and after the cessation of negative external impulses, the importance of internal factors grew. The internal factors are favourable to Pomorskie economic resilience due to the diversification of production, a small proportion of sensitive industries, a growing share of export of high tech products and due to the ties with stable countries in economic terms. Technological modernization allowed companies to raise the level of competitiveness which also fostered economic resilience of the region.

Improving the level of human capital, including the level of entrepreneurship, are the soft factors which favoured economic resilience. It should be noted, however, that rootlessness of some international companies mainly in the electronics sector and the lack of investment in research and development adversely affects the stability of the Pomorskie region. Another problem is the low level of innovation of Pomorskie companies.

The region's economy has not made a significant reorientation. The only significant change was the decreased of traditional shipbuilding industry accompanied by increase of production of specialized ships and yachts. More people found employment in the outsourcing sector in recent years. Temporary difficulties in the electronics sector as well as in the financial and the construction sector did not change significantly the structure of region's economy. Pomorskie region economy was prepared for and responded to economic slowdown. According to interviewed experts a major role in this played a skilful cooperation between employers and employees in a difficult period of economic slowdown. It

was manifested by adopting a flexible working time and limited wage demands which helped stabilize employment. It should also be noted that the Pomorskie region has the ability to resist disruptive changes caused by external factors.

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