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Staying on the old development path, but 'smartly' – a case study of Warmia and Masuria

Abstract
Between 1989 and 2014, the Warmian-Masurian Voivodeship (one of the poorest regions in the European Union) was subjected to a number of external stimuli. However, not only has its position in the ranking of provinces failed to improve – it has actually worsened. Despite this, positive adaptive changes have occurred in the region, although they are limited in scope. The attitude of peripheral regions towards external stimuli can be quite reactive, as seen in the case of Warmia and Masuria. It can be assumed that the province's smart specialisations (water economics, high-quality food, and wood and furniture) will contribute to further quality in the economic structure of the region, but it will not necessarily improve its position in relation to other regions in Poland.

Keywords
Regional development • innovation • development path • smart specialisation

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Introduction

The Warmian-Masurian Voivodeship is located in north-eastern Poland. It belongs to the so-called "eastern wall" created by the five NUTS 2 territorial units – the poorest areas of the European Union (most of which are located at the outer borders of the EU).

The aim of this article is to answer the question as to whether important events over the last 25 years may have affected the region, and whether changes can be observed that fit into the concept of path-dependent development, and if this is so, how. The article is based on a literature review (including regional strategic plans) and statistical analyses, but primarily on nine in-depth interviews conducted with representatives of the region who are involved in development processes both at the regional and local level.[1] One of the important sources of knowledge that enabled the assessment of changes taking place in the region was the author's own experience as a co-creator of the next three development strategies for the Warmian-Masurian Voivodeship.

During the period 1995–2014 (available comparable data), Warmia-Masuria was characterized by a continuous increase in GDP per capita (at current prices) but a decline in value of GDP per capita relative to the national average (Figure 1). In 1995, Warmia-Masuria's share of the national GDP was 3.0%, but by 2014 it had fallen to 2.7%. The region occupies a fairly stable position, both in terms of global GDP (12th place in the country), and GDP per capita (currently in 14th place, although in previous years it has been as high as 12th).

It should be noted that, despite its weak position, Warmian-Masurian province has been experiencing continuous GDP per capita growth, even during and after the economic crisis that hit many European regions.

Based on the above data alone, it can be argued that the competitive position of the region has not changed, and using the measure of GDP per capita (which is coming under increasingly fierce criticism; see, for example, Stiglitz, Sen and Fitoussi 2013), it can be concluded that the development path is probably the same.

The region's development path and the possibility for change

Each region can be described in terms of its internal resources, the processes occurring within the region, and its relationship to its surroundings, as well as the effects that result from these processes. The concept of path-dependent development (well developed in recent years, see Arthur 1989; Domański 2000; Gwosdz 2004; Martin 2011; Henning, Stam and Wenting 2013; Boschma 2015; Szmigiel-Rawska 2015) focuses on four key concepts:

– A region's development path is simply a set of the characteristics of the region and the processes that lead to its development. The literature highlights a variety of features, which – with reference to the pioneering publication by Arthur

[1] Those with whom in-depth interviews were conducted included representatives of three technology parks from the three main cities of the region, one university, one research institute, and local and regional authorities. The structured interview scenario included five key questions concerning: (a) the main factors that have determined the region's development over the last 15 years; (B) the importance of infrastructure and human capital; (C) the importance of networking and learning; (D) the assessment of smart specialization in the region; and (E) the major factors limiting the development of the region. The author is aware of the limitations of using this method, but information derived from this source has been compared to statistical data and analysis of existing materials (mainly regional strategies).

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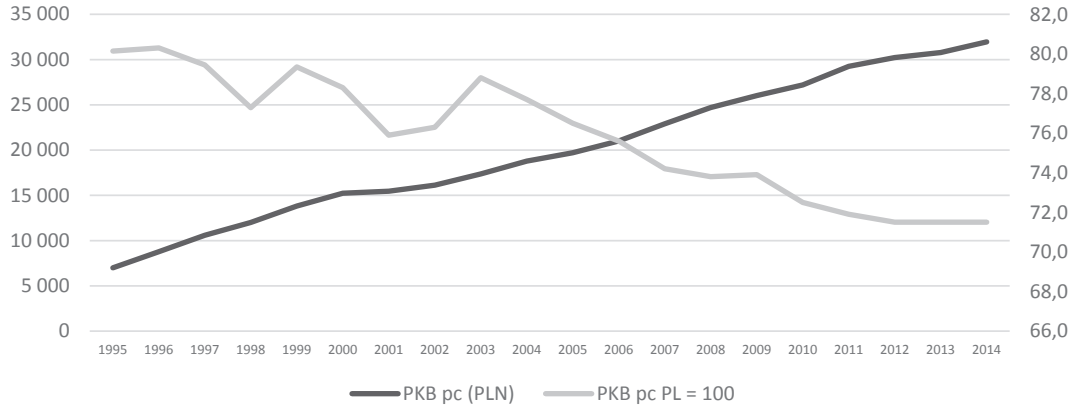

Figure 1. GDP per capita for the Warmian-Masurian Voivodeship, PLN (left axis), Poland = 100 (right axis)
Source: own elaboration based on Central Statistical Office (GUS) data (www.stat.gov.pl)

(1989) – are often considered through the prism of technology. Those mentioned include, natural resources, the presence of companies (both co-operators and competitors, but global firms are also very important (Andrews, Criscuolo and Gal 2015)), and institutions – those from the business environment, as well as public institutions (Pylak 2015). Referring to the Quadruple Helix concept involving business, science, administration and regional communities (Leydesdorff 2012), the importance of the quality of the institutions active in the region (Putnam 1993) should be underlined as well as their proactive attitude towards addressing regional problems such as public-private partnerships (Asheim, Moodysson and Tödtling 2011). The role of government policies and actions is also emphasized in the context of innovation opportunities, especially in the early stages of research and development characterized by high risk (Mazzucato 2016).

– Path-dependence – this phenomenon has mostly been perceived as negative and is associated with blocking a region in its path (Arthur 1989; Sydow et al. 2012). More recently, attention has been drawn to the fact that this "blocking" can also be positive (for example, in the development of new innovative sectors). Analyzes over long time periods show the changes that occur in regions in terms of their productivity improvement (Le Gallo and Kamarianakis 2011).[2] Path-dependence is always the result of the historical processes that formed the specific institutional capacity of the region, which in turn enables, or fails to respond adequately to, attempts to change the development path (Sydow, Schreyoegg & Koch 2009).
– Path changes that divert the region from its current development model. Among the factors that contribute to these changes, Martin (2011, p. 204) lists: radical innovation, local creativity, sectoral changes to a variety of functions, spin-offs in new spheres of activity, the formation of new companies, and the reorientation of operating sectors. Path changes depend on continuous processes, but also those resulting from strong stimuli (Gwosdz 2004; Pendall, Foster and Cowell 2010).
– Resilience – meaning the ability to accept and respond to external stimuli. In the context of economic shock, Martin (2012) suggests four possible reactions by regions: "renovation", "resistance", "re-orientation" and "recovery". Regional resilience can be perceived in an evolutionary manner, thus taking into account the adaptation to the new conditions of development (Boschma 2015).

Within the context of these key issues, it is important to ask whether intelligent specializations could become a factor in changing the development path of peripheral regions. The concept of intelligent specialization assumes an increase in the competitiveness of companies based on innovation. This requires a close and valuable relationship between business and science, in particular research and development centers (Foray 2015). In this process, active national and regional policies may play an important role, and therefore all EU regions and countries have identified their smart specializations in order to better spend public funds on increasing the competitiveness of regions.

The Warmian-Masurian Voivodeship – a peripheral region

The Warmian-Masurian Voivodeship can be characterized as follows:

– Poor. In 2014, the GDP of the province for PPS was 48% of the EU's average, and during the period 2008–2014 it increased by only eight percentage points.
– Agriculture has a continuously high share in the gross value added. In 2014, 6.5% of the GVA was in the agricultural sector, while the national average was 3.1%.
– Unattractive for investors. In 2014, the province was placed 14th in terms of invested foreign capital.[3]
– Little innovation. In 2013, expenditures on R&D in the business sector in relation to GDP amounted to 0.07%, and total R&D expenditures in relation to GDP were 0.36%.
– Poor transport access. The region belongs to that group of regions with the lowest availability of transportation in Europe (*ESPON*..., 2014).

The peripheral nature of the region is highlighted by analyses that indicate the following weaknesses of the province (*Strategia*..., 2013, p. 34): the lowest micro-business investment expenditures in Poland; very low rates of entrepreneurship; low R&D

[2] Such regions include North Jutland in Denmark. In the 1960s, the region was less developed in Denmark, with a population of about 0.5 inhabitants. Transformation of traditional industries (e.g. food production, fisheries, textiles) has been possible with key companies starting to compete in the field of innovation. Their development was based on the construction of extensive regional cooperation networks (including spin-offs), which led to the emergence of competitive clusters. The example of this region illustrates, at the same time, that even leaning on technologically advanced industries requires a continuously active policy and is conditioned by global processes. (see: Østergaard & Park 2015).

[3] The main barriers to investment inflows to the region include: low transport accessibility, a narrow market, and poor social and economic infrastructure (Borowicz et al. 2016).

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expenditures; a low level of patent activity; infrequent examples of cooperation at the level of business–business, business–science, and business–business environmental institutions; institutional deficiencies in terms of the institutions providing services for SMEs; universities are focused primarily on education (few business relationships); the low level of development of the information society; the poor accessibility to transportation in the region; and the poorly developed metropolitan functions of the district capitals.

Despite these weaknesses, the region also has a range of strengths, as listed by Strategia (2013, p. 33): surface water resources that are unique on the national scale, sectors with a high potential for smart specialization, good conditions for the development of agricultural production, higher education institutions, the presence of large domestic and foreign owned companies, companies experienced in the use of modern technology, the potential for developing renewable energy sources, and a clean and biodiverse natural environment. In reference to the strengths of the region, this document defines three smart specializations: water economics, high-quality food, and wood and furniture. It also specifies five horizontal problems for companies within the region: financing, logistics, security, ICT, and trade fairs and promotion. These need to be solved in order to streamline the development of smart specialization.

Peripheral regions subjected to external stimuli

An analysis of the period 1989–2014, indicates some of the important stimuli that may have contributed to a change in the development path of the Warmian-Masurian Voivodeship.

The first stimulus was the transformation that began in 1989 as a consequence of the Round Table Agreement, which initiated political and economic changes in Eastern Europe. In 1989, the current area of Warmia and Masuria belonged to three quite distinct provinces (**Table 1**).

Their importance within the country at the beginning of the transformation manifested itself mainly in high employment in agriculture. As a result of the liquidation of state-owned farms, there was a radical decline in employment in the agricultural

Table 1. Elbląg, Olsztyn and Suwałki provinces' share of national totals for the listed indicators in the years 1974, 1989, and 1998

Indicator	Year	Elbląg	Olsztyn	Suwałki
Population	1974	1.2	1.9	1.2
	1989	1.3	2.0	1.2
	1998	1.3	2.0	1.3
Employment in agriculture and forestry	1974	3.4	4.8	3.0
	1989	3.1	4.9	2.9
	1998	0.8	1.4	1.5
Employment in industry and construction	1974	0.9	1.3	0.6
	1989	0.9	1.4	0.7
	1998	1.1	1.7	0.8
R&D expenditures	1974	-	-	-
	1989	0.0*	0.2*	0.0*
	1998	0.0	1.1	0.0
Students	1974	0.0	2.2	0.0
	1989	0.1	2.5	0.0
	1998	0.0	2.1	0.4
Accommodation available in tourist facilities	1974	1.4	3.1	2.9
	1989	1.4	4.5	5.1
	1998	2.4	3.2	2.6
The five main products at the national level	1974	metal forging machines (15.7); felt (10.2); blockboards (10.2); beer (6.4); steel castings (semi-finished) (5.4)	rubber products (19.5); felt (17.8); blockboards (8.9); machinery, equipment and tools for agriculture and forest management (7.0); hardwood timber (6.0)	blockboards (34.5); fibreboard (8.9); softwood lumber (4.5); butter cream (3.7); products for animal slaughter (3.6)
	1989	paper (13.0); cardboard (7.2); beer (5.9); steel castings (semi-finished) (4.7); butter (2.5)	rubber products (21.9); felt (15); slaughtered poultry (10.0); softwood lumber (7.8); machinery, equipment and tools for agriculture and forest management (7.1)	blockboards (12.9); fibreboard (7.5); cigarettes (4.8); softwood lumber (4.3); meat and fats (industrial slaughter) (3.4)
	1998	paper (24.0); beer (14.0); steel castings (semi-finished) (6.0); hardwood timber (5.6); sugar (3.0)	rubber products (28.6); poultry carcasses (10.2); hardwood timber (9.4); machines and equipment for the food industry (7.4); felt (7.0)	cigarettes (14.9); softwood lumber (3.4); meat and fats (slaughter in production activity) (3.0); blockboards (2.8); butter (2.3)

**Value represents the percentage of expenditure on science and technology development out of the total investment expenditures of the province.*
Source: own calculations based on Statistical Yearbook of Voivodships (1975; 1990; 1999).

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sector, and long-term social problems were induced that can still be seen today. The Olsztyn Voivodeship, which had the largest urban center (the city of Olsztyn, approx. 175,000 inhabitants in 2014), also performed an important academic role; while both the Olsztyn and Suwałki voivodeships were also attractive for tourists (being known as "the land of a thousand lakes").

A comparison of the structuring of the main products, for which these three provinces were known, on a national scale over the period 1974–1999, highlights the following facts:

– During the period leading up to 1989, an important role was played by the state-owned companies located in the area, including; Olsztyn Car Tire Plants, Olsztyn Furniture Factories, the "Zamech" Steam Turbine Factory in Elbląg, Meat Plants in Ełk; and smaller paper, furniture and clothing factories (cf. Karpiński et al. 2013).
– After 1989, in the context of Poland becoming open to the market economy, large foreign brands who were interested in the acquisition of companies through privatization, appeared in the three provinces (cf. Dziemianowicz 1997; Domański 2001).

From the very beginning of the transformation, all three provinces were affected by high unemployment, especially Olsztyn and Suwałki (the Gołdap municipality located in Suwałki was the Polish record holder, with unemployment exceeding 40%). Due to their structural problems, both Olsztyn and Suwałki were beneficiaries of aid from the first pre-accession programs (PHARE-STRUDER and PHARE-RAPID), and between 1998 and 2000, Elbląg joined the group of provinces covered by the PHARE-STRUDER 2 program. Some of the country's first special economic zones were created in this region of Poland (Olsztyn SEZ and Suwałki SEZ). While the effects of the STRUDER and RAPID programs can be seen as positive (*Ewaluacja*..., 2001; *Ewaluacja*..., 2002), the effectiveness in terms of attracting external capital to these SEZs in the early years was almost non-existent (Kryńska 2000; Ambroziak 2009).

The second stimulus was an administrative reform that appointed 16 large self-governing provinces in place of the then 49. According to regional representatives, the reform was very significant because it allowed this part of Poland – which was still facing limited financial possibilities – to address the most important challenges from the point of view of a regional community, not central government. It is significant that the first Socio-Economic Development Strategy for the Warmian-Masurian Voivodeship (*Strategia*..., 2000) was prepared with extensive communal participation. The Regional Steering Committee comprised 23 people, the Programme Council consisted of 130 people, and a total of 149 people were involved in 9 working groups. The Marshal's Office, as the new institution responsible for regional development policy, was mobilized into cooperation by a number of people and organizations, and continued to be active over the following years, becoming the basis for building the innovation support system. Although the actual Strategy of 2000 made few references to innovation, it still took center stage in the development of the Regional Innovation Strategy for the Warmian-Masurian Voivodeship (RSI 2004). This document listed the areas that had strong innovation potential: the furniture industry, food processing, tourism, and construction. It should be emphasized that the identification of specific sectors for support was strongly limited in the first strategic documents in Poland, due to the fear of singling out particular groups. It was the subsequent experiences, as well as increased pressure on the concretization of strategic documents, that resulted in significant improvements in this area (Szlachta 2013). Meanwhile, the local regional strategies that were prepared were meant to support the planned disbursement of resources from pre-accession funds (2000–2006. See Guz-Vetter 2001).

The third stimulus was Poland's membership to the European Union. The impact of European funds on the development of the Warmian-Masurian Voivodeship can be assessed by quantifying the impact of the additional resources (external intervention) on economic growth, employment and other indicators of development (Czauderna et al. 2015). The Provincial Strategy was updated in 2005 (*Strategia*..., 2005), followed by the Innovation Strategy in 2010 (RSI, 2010). It should be emphasized that the updated Provincial Strategy contained references to innovation in the region. The areas of high innovative potential are listed as the furniture industry, food processing and tourism. The result of the implementation of European funds during the period 2007–2013 was the improvement of technological and transport infrastructure, and the development of human capital, as well as technology park infrastructures (*Ocena*..., 2014). During this period, the network of business environment institutions (called InnoWaMa) grew, bringing together several key institutions from across the region to support entrepreneurship and, in particular, the diffusion of innovation.

Between 2008 and 2010, as in other parts of the world, the region was subjected to a fourth stimulus: the economic crisis. At times of crisis, peripheral provinces are affected to a lesser extent than regions that are heavily dependent on external markets. During the period 2008–2010, there was a stabilization in the ratio of the GBP per capita in Warmia and Masuria to the national average (Figure 1.). However, the province was rated as being one of the more sensitive to external stimuli, and as having low capacity to respond to these stimuli (Zaucha et al. 2014). Without a doubt, the period of economic crisis and its consequences for the region, were mitigated by the acceleration of investments co-financed by European funds. Analysis of the sectors listed as smart specializations shows that this section of the region's economy was still performing well in terms of sales, employment and exports (see: Dziemianowicz et al. 2015).

The fifth stimulus should be counted as a new perspective for the European Union (2014–2020), which the region began preparing for in 2012. The Warmian-Masurian Voivodeship was one of the few in Poland to specify its smart specializations, which it did in the main Socio-Economic Development Strategy of the Warmian-Masurian Voivodeship up to 2025 (*Strategia*..., 2013), which subsequently became the records of the Regional Operational Program Warmia and Masuria 2014–2020. A comprehensive evaluation of this recently-initiated process is not currently possible, but some of the problems still faced by the region can be indicated (see Dziemianowicz & Peszat 2014):

– The decline in the proportion of R&D expenditures (Table 2.) goes hand in hand with a, clearly, still underdeveloped understanding of the concept of smart specialization. Some businesses are still awaiting funding opportunities for technology purchases, not seeing the possibilities for the creation of innovation in the region.
– In addition to the region's declining share in the national GDP, it is also facing a decline in its share of number of students and tourists.
– The changes needed in universities are moving at a fairly slow pace, although specialized departments and research institutes with experience in business relationships are, and will be, key partners for cooperation in terms of smart specializations.
– Difficulties in cooperation are manifested not only between different groups of the quadruple helix (business, administration, science, residents), but also within groups.
– During the years 2009–2014, the number of companies having foreign capital in the region decreased from 301 to 299, when in other voivodships – including eastern Poland – they increased significantly.

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Table 2. Warmian-Masurian Voivodeship's share of national totals for the listed indicators in the years 1998, 2009 and 2014

Indicator	1998	2009	2014
Population	3.8	3.7	3.8
Employment in agriculture and forestry	2.9	3.1	2.9
Employment in industry and construction	3.1	3.2	3.2
R&D expenditures	1.1	1.3	0.8
Students	2.4	2.8	2.4
Accommodation available in tourist facilities	5.6	4.3	4.1

Source: own calculations based on GUS data and Statistical Yearbook Warmińsko-Mazurskie Voivodship (2010; 2015).

The same path?

With reference to the theory of path-dependent development, and taking into account regional differences in Poland, it can be argued that the region is still one of the poorest in Poland, and that external stimuli do not contribute greatly to the possibility of changing this position.

However, certain changes within the region have demonstrated its resilience in terms of both emerging opportunities and threats. During the period discussed, there was a qualitative change in the region's tourism offer, and newly created science and technology park facilities. Universities and institutes located in the region are beginning to notice the growth potential of technology parks.

The changes that have been introduced by regional policy – involving, among other things, the mobilization of institutional resources and accommodating the requirements of national and EU policies – are positive, but still limited in geographical and sectoral terms. Resources from structural funds are still a significant determinant in political, institutional and economic decisions. Therefore, while it is possible to indicate a few examples of the region's adaptation to external stimuli, it is difficult to list actions that point to a bottom-up process of path change resulting from a planned bottom-up process. This may indicate that peripheral regions are, de facto, doomed to this kind of "reactive" behavior.

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