
The Importance of Coastal Cities and Regions in Selected European Countries

Submitted 19/09/21, 1st revision 04/10/21, 2nd revision 20/10/21, accepted 20/11/21

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Abstract:

Purpose: The article aims to verify the common claim about the location of coastal regions and related historical conditions as a factor bringing above-average socio-economic benefits.

Design/Methodology/Approach: The analyses in the paper are based on data from Eurostat and European Commission reports. They take into account the state of knowledge of urbanisation processes in Europe and their historical background. Data analysis and synthesis methods were used.

Findings: The article brings confirmation of the thesis made on the basis of basic development indicators, as well as comparative data on the elements of the settlement network structure of selected European countries. The regularities observed reveal the role and position of coastal cities, their importance for building the potential of individual countries in relation to the coast and the sea, but also the specificity depending on the size of the country or its location on the continent.

Practical implications: regions will be identified, and therefore countries, for which the potential threat of climate change and its consequences, in confrontation with the socio-economic potential of the location indicated in the title, may result in the greatest difficulties and the need to remodel the settlement structure.

Originality/value: The concept of coastal cities as a separate object of study is rarely present in the source literature. In addition, the authors seek to introduce the development of research and analysis of basic indicators based on a developed perception of coastal regions including so-called low-lying coastal regions. This will form the basis for further extended research into these areas. In addition, an analysis of the demographic and economic consequences was also carried out in the light of the potential risks in these areas and the feasibility of their functioning in the form known to date. This provides some methodological structuring that can serve as a starting point for verification based on further and more recent data, as well as an in-depth analysis of the links between urbanisation, development in coastal areas and the risks posed by climate change.

Keywords: Demography, GDP, coastal regions

JEL classification: O10, O29, R11

Paper Type: research article.

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1. Introduction

The coastal location and the associated access to maritime water transport and the riches of the sea have been and continue to be important urbanising elements. However, it is important to note that the factors that once enabled societies to develop and become richer are not so obvious today. Economic changes, globalisation and the associated so-called international division of labour, restrictions in sectors such as fishing or heavy industry, are creating new criteria for competitiveness, the importance of national economies and cities (Cuyala, Ducruet, and El Hosni, 2018). On the other hand, maritime transport is still the backbone of the global economy and seaports remain a strategic element of world trade and the proverbial windows to the world of their hinterland, i.e., the regions from which cargoes are drawn to a given port. This is obviously only a fragment of the maritime economy which, in accordance with the most commonly used definitions, comprises economic activities including maritime and inland navigation and related services, port operation, shipbuilding and ship and vessel repair, sea fishing, extraction of other living marine resources, maritime mining, maritime and underwater construction, as well as scientific and research activities and education, activities of entities for the safety of navigation and ships, proper use of maritime roads, ports and harbours, environmental protection, saving life at sea, specialised technical supervision, protection of sea shores, etc. This whole complex set of activities makes up the so-called blue economy, which is related to the exploitation of the sea's economic resources, recognising the need for sustainable development in this area.³

In practically every segment of the blue economy, it is necessary to develop urban population, institutional and production facilities. Economic activity associated with coastal areas or the sea itself does not necessarily mean being based in coastal towns, let alone paying taxes there. However, many maritime-related businesses have the character or structure of family businesses, established by people from different maritime professions, or are based in maritime regions for practical reasons such as commuting.

³According to the European Commission's annual report, the Blue Economy covers all sectoral and cross-sectoral economic activities based on or related to oceans, seas and coasts, including: maritime activities undertaken in ocean, marine and coastal areas, such as the exploitation of marine resources (fishing and aquaculture), offshore mining, marine renewable energy, desalination, maritime transport and coastal tourism; marine-related activities using ocean products or marine activities, such as seafood processing, biotechnology, shipbuilding and repair, port operations, technology and equipment, digital services, etc. " The EU Blue Economy Report 2021, Office of the European Union. Luxembourg 2021, https://blueindicators.ec.europa.eu/sites/default/files/2021_06_BlueEconomy_Report-2021.pdf, p. 2

They mainly employ people living in coastal regions. The attempt to answer questions about the position of coastal cities and their development is directly related to the collection and interpretation of data on specific demographic, economic or financial indicators for these regions.

The research presented in this article concerns European countries, particular attention is paid to those belonging to the European Union, but sometimes, in order to grasp a broader perspective of the phenomenon, data from other countries are presented. Naturally, due to the criterion already mentioned in the title, countries such as Austria, Luxembourg, Slovakia, the Czech Republic or Hungary, i.e., those which are landlocked, were not included in the analysis. Nevertheless, it should be borne in mind that they are not insignificant for the maritime regions of both the North Sea, Baltic Sea and Mediterranean Sea ports, as their hinterland and as having important transport infrastructure on their territory.

2. Coastal Cities in the Structure of Europe's Settlement Network

Cities are an important component of economic potentials and their driving force. This rule was repeatedly confirmed during the Industrial Revolution and proved itself in the development processes of later decades concerning the Northern Hemisphere. In the twentieth century it also manifested itself in the emerging economies of the so-called Global South, now according to the consensus opinion of experts, urbanisation and metropolisation are constant twin reflections of industrialisation and development in developing countries and emerging economies. These phenomena are most concentrated on the south-east coast and in the deltas of the great rivers of Asia, but also in Africa (Szymańska, 2008). These circumstances prompt the question about the importance of coastal cities as leading centres of economic life and leaders of development processes. Their presence is a relatively constant factor, with neither a radical rise in the centres nor an equally dramatic fall in their potential and importance over the decades.

Coastal cities in ten European countries are the most densely populated ones. Their position in national and international hierarchies makes them - attracting capital, know-how, experts, revitalisation projects, cultural potential (e.g., the Guggenheim Museum in Bilbao, Oslo with its opera house, or Venice). As leading urban centres in their respective countries, they are among the most attractive places to live and work. In the historical cross-section, however, it is necessary to take into account the economic volatility to which coastal cities with their often functional specialisation are sensitive. Hence the existence of coastal cities in all countries with access to the European seaboard, but also their position in the hierarchies of the settlement network. During a similar period, Genoa and Venice were losing this position, while Amsterdam was gaining. Marseille is one of the largest, but not at all the highest ranked city in France in economic terms, similarly the downturn has affected cities linked (though not always directly adjacent to the sea) to the UK maritime economy.

Of course, it must be borne in mind that cities have emerged and developed over long periods of time, under the influence of complex factors and in relation to changing political realities. Modern nation states are creations with a much shorter history. The distribution of cities in space and its relationship to national borders and the internal structures of the settlement network of countries is not unconditional. The position of coastal cities in the hierarchy of cities with the largest population in selected European countries is shown in Table 1.

Table 1. Coastal cities in terms of urban population in selected European countries

Name of country	First largest city in the country with population in thousands	Second largest city in the country with population in thousands	Third largest city in the country with population in thousands	Position of a given city in terms of population in a given country with population in thousands
Sweden	Stockholm – 950	Göteborg – 565	Malmö – 333	
The Netherlands	Amsterdam – 872		The Hague – 545	
Greece	Athens – 660	Thessaloniki – 315	Patras – 167	
Finland	Helsinki – 648		Turku – 191	
Latvia	Riga – 626		Liepāja – 77	5. Jūrmala – 51
Norway	Oslo – 624	Bergen – 28	Trondheim – 180	
Denmark	Copenhagen – 560	Aarhus – 319	Odense – 193	
Portugal	Lisbon – 507	Porto – 215		7. Funchal – 104
Estonia	Tallinn – 438			4. Pärnu – 44
Malta	Valletta – 243			
Germany		Hamburg – 1 847		29. Kiel – 246
Spain		Barcelona – 1 640	Valencia – 794	
France		Marseille – 860		4. Toulouse – 480
Belgium		Antwerp – 530		11. Ostend – 72
Cyprus		Limassol – 185	Larnaca – 86	
Croatia		Split – 168	Rijeka – 115	
Italy			Naples – 954	5. Palermo – 652
Bulgaria			Varna – 336	4. Burgas – 202
Lithuania			Klaipėda – 148	
Poland				6. Gdańsk – 470 7. Szczecin – 400
Romania				5. Constanța – 284

Source: Own elaboration based on *Population on 1 January by age groups and sex - cities and greater cities*

https://ec.europa.eu/eurostat/databrowser/view/urb_cp01/default/table?lang=en

Apart from a few metropolises on a global scale, Europe is a continent of medium-sized cities (Clark, Moonen, Nunley, 2019). Of those included in the above list, Hamburg has the largest population, being the 13th largest metropolis in Europe. Of those by the sea, Istanbul (15million), London (8.7 million) and St Petersburg (5.3 million), respectively the first, third and fourth largest cities on the continent but outside the EU, have more inhabitants than Hamburg.

There are three coastal centres in the second ten largest cities in Europe, and only one in the fourth ten - the last one containing cities with a population of one million. All of Ireland's largest cities - Dublin, Cork and Limerick - were founded on estuarine stretches of the river, within a few dozen kilometres of the sea. The same is

					in the country ³		
1	Greece	13676	0.105	725188	6.77%	6974	5.28%
2	Italy	7600	0.026	4423035	7.34%	17136	5.67%
3	Denmark	7314	0.172	1395796	23.97%	11641	27.07%
4	Croatia	5835	0.104	99513	2.45%	1420	1.61%
5	Spain	4964	0.010	3595313	7.60%	6498	1.28%
6	Estonia	3794	0.090	169805	12.78%	4646	10.32%
7	France	3427	0.006	2613075	3.89%	13675	2.16%
8	Sweden	3218	0.008	831896	8.06%	12607	2.87%
9	Germany	2389	0.007	3521266	4.23%	20688	5.79%
10	Portugal	1793	0.020	331169	3.22%	2200	2.39%
11	Ireland	1448	0.021	329117	6.63%	3009	4.30%
12	Finland	1250	0.004	548846	9.93%	9231	2.73%
13	Cyprus	648	0.070	64337	7.25%	180	2.00%
14	Latvia	498	0.008	794768	41.66%	3814	5.87%
15	The Netherlands	451	0.013	12223303	69.86%	23778	56.61%
16	Poland	440	0.001	874831	2.30%	5045	1.61%
17	Bulgaria	354	0.003	86889	1.25%	309	0.28%
18	Malta	253	0.801	6903	1.34%	23	7.67%
19	Romania	225	0.001	201122	1.04%	6779	2.85%
20	Lithuania	90	0.001	89328	3.20%	1026	1.58%
21	Belgium	66.5	0.002	2187912	18.94%	3867	12.47%
22	Slovenia	46.6	0.002	27228	1.30%	25	0.13%
Total		59780.1		35140.64		154571	
Avg.			0.067		11.14%		7.39%

Source: Own elaboration based on:

1. S. McEvoy, M. Haasnoot, R. Biesbroek, *How are European countries planning for sea level rise?*, *Ocean & Coastal Management*, Volume 203, Elsevier, 2021
2. *Surface area of European Union member states*, https://europa.eu › body › size_of_countries_pl (accessed on: 12.09.2021)
3. *EU population in 2020: almost 448 million*, <https://ec.europa.eu/eurostat/documents/2995521/11081093/3-10072020-AP-EN.pdf/d2f799bf-4412-05cc-a357-7b49b93615f1> (accessed on: 12.09.2021)
4. *LECZ - Low Elevated Coastal Zones is commonly defined as the contiguous and hydrologically connected zone of land along the coast and below 10 m of elevation* (Lichter et al., 2011; McGranahan et al., 2007).

Proximity to the sea shore does not have to be a factor that unconditionally positively influences the dynamics of development processes. They are often characterised by lower transport accessibility than elsewhere, deficits in the area available for the implementation of investments, sometimes restrictions related to the strategic (including military) location. The proximity of the sea affects the stability and bearing capacity of the soil, and individual coasts have their own specific characteristics related to the nature of the coastal zone (Airoldi and Beck 2007). In recent times, increasing attention has been paid - especially in the countries of the European Union - to environmental protection.

Coastal areas with high natural value are therefore subject to restrictions related to the functioning of EU directives and the definition of zones for the implementation of the European Natura 2000 programme. Coastal areas which did not undergo urbanisation in the past or which are far from urban centres may therefore lack many other development alternatives as they are unable to exploit the advantages of their location for the benefit of the tourist economy. Recent years have shown conclusively that this kind of restriction bears the hallmarks of an unstable - like any other - economic monoculture, poorly able to withstand sudden and violent periods of downturn. (Sultana, Islam, and Islam, 2020; (Anguera-Torrell, Vives-Perez, and Aznar-Alarcon, 2020)

The complex nature of these factors and the interactions between them is reflected in the picture of the state of development of Europe's coastal regions. Despite profound structural and economic changes, including the collapse of the European shipbuilding and fishing industries, or the fact that the centre of gravity of global maritime transport is steadily shifting towards Asia, access to the sea and the concentration of potential on it is an element of development rather than a burden for each of the continent's countries. A clear change that has taken place in the socio-economic development of the countries with the shortest tenure in the European Union can be seen in the comparative account of the GDP growth of the coastal regions of Latvia and its remaining regions – in the first group the change over the period 2012 – 2018 was 37%, in the second – 13%. Romania experienced much weaker growth on the coast than in the hinterland during the same period (45% vs. 55% respectively), which is nevertheless linked to a much stronger share of the country's economic and population potential.

As in the case of Poland and even more so Bulgaria, this focus on sectors based on the coastal location is so low that it does not dominate the overall balance of the economic situation. For southern European countries, however, during a difficult period of financial market turmoil and deep downturn, the potential of the coast and its hinterland was one of the anchors preventing a more serious economic drift. The Greek economic collapse has affected to a greater extent regions outside the coastal area that do not rely so much on tourism, but also those that do not profit from port, ship owning and shipbuilding activities. To a lesser extent, the same pattern can be noted for Portugal, Spain and Croatia.

In Italy in 2018, the value of GDP per capita in non-maritime regions was higher by €11,400 compared to maritime regions, in France by €9,400, in Spain by €2,600. In Finland and Latvia the value of this indicator was more than €10,000 higher for maritime regions, in Sweden and Estonia by €8,000, in Portugal by more than €5,000, it was also higher in Greece, the Netherlands, Belgium and Romania. In the north of the continent, therefore, the coastal environment attracts and generates development, the further south you go, the more this pattern applies to smaller countries (Portugal, Greece, islands of Cyprus and Malta), and in the case of large territorial structures (Italy, France, Spain), the greater the economic importance lies

in areas further out to sea. A full account of the economic and demographic potential of the coastal regions of the European Union compared to other regions is given in Table 3.

Table 3. Economic and demographic potential of coastal and other regions in the European Union countries.

	Coastal regions					Other regions		
	GDP at current prices (2018)			Percentage share in the country		GDP at current prices (2018)		
	EUR million	per capita	percentage change 2012 – 2018	GDP	Population	EUR million	per capita	percentage change 2012 – 2018
Belgium	153653.87	41700	21	33	32	306517.12	39600	18
Bulgaria	7201.59	6800	29	13	15	48910.2	8200	34
Czech Rep.						210927.8	19800	30
Denmark	298328.6	51500	21	100	100			
Germany	282867	40400	22	8	8	3073543	40500	22
Estonia	21620.15	21600	43	83	76	4317.57	13600	45
Ireland					94	6605.44	21900	14
Greece	171125	17000	-4	95	94	8602	12800	-14
Spain	689612	24700	18	57	60	513505	27300	16
France	761767.55	29300		32	39	1597838.11	38700	
Croatia	16806.19	12400	20	32	34	35143.97	12800	17
Italy	895480.19	24700	7	51	60	874027.13	36100	12
Cyprus	21432	24600	10	100	100			
Latvia	23396	18800	37	80	65	5706.95	8400	13
Lithuania	4977.39	15700	23	11	11	40513.69	16300	38
Luxembourg						60053.08	98600	36
Hungary						135931	13900	36
Malta	12489.19	25700	70	100	100			
Netherlands	437381	46600	18	57	54	334366	42600	21
Austria						385227.61	43600	21
Poland	47080.67	12100	29	9	10	450760.85	13100	28
Portugal	180876.04	20700	22	88	85	24162.84	15600	18
Romania	10132.37	11600	45	5	4	194205.38	10400	55
Slovenia	5773.33	20300	27	13	14	40089.28	22400	26
Slovakia						89505.51	16400	22
Finland	163351.59	46200	18	70	64	70166.91	35400	13
Sweden	398526.21	47700	10	85	82	72048.25	39400	7

Source: Own elaboration based on Eurostat, Coastal regions: people living along the coastline, integration of NUTS 2010 and latest population grid
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Coastal_regions_-_population_statistics

4. The Importance of Cities in Relation to the Maritime and Landlocked Nature of Countries

Taking into account the available data, a breakdown of European countries can be proposed in terms of the concentration of potentials in coastal regions. Its structure is related to fairly clear groupings in the scale of population and economic potentials characterising European countries. The level of 49% in the concentration of population and the value of GDP produced within the coastal regions is the threshold from which one can speak of a maritime (coastal) orientation of a given country.

The term "orientation" is understood here as a dominant or particularly significant concentration of development potential expressed by data collected at the regional level. In the range 32 - 39% are the values obtained by countries which are assigned here a mixed character (orientation). With values below 15% we can already speak of countries with an inland orientation. Importantly, the division proposed in Table 4 is justified by the settlement network hierarchies of the individual countries. To underline the importance of the logic of this hierarchy, this typology takes into account the United Kingdom which, as a country already outside the European Union, is not included in Community statistical compilations (a similar motivation applies to the characterisation of Norway and Switzerland, also countries outside the European Union).

Table 4. Typology of European countries in terms of concentration of potentials in coastal regions

maritime/coastal orientation		mixed orientation
GDP and population above 49%		GDP and population above 49%
Sweden		France
Finland		Belgium
Norway		Croatia
Denmark		inland orientation
The Netherlands		GDP and population below 15%
Portugal		Germany
Estonia		Poland
Greece		Bulgaria
Cyprus		Lithuania
Malta		Romania
Latvia		Slovenia
		inland countries
Spain	Great Britain	Austria
	Ireland	Switzerland
	Italy	Hungary
		Czech Republic
		Slovakia
		Luxembourg

Source: Own elaboration based on: Coastal regions: people living along the coastline, integration of NUTS 2010 and latest population grid.

The conclusions drawn from the analysis of population size and GDP correspond with other data. In 2019, the employment rate in the coastal regions of Latvia was 7.7 percentage points higher than in the rest of the regions. In Belgium the difference was 7.5 pp, in Ireland 5.9 pp, in Estonia 4.2 pp, in Finland 2.2 pp, in Greece 2.1 pp, in Portugal 1.7 pp, values below 1 pp were achieved in Sweden, Poland, the United Kingdom and Slovenia. The largest disparity in favour of non-maritime regions was in Italy 5 pp, and in Romania 12.2 pp (Eurostat, 2021). Higher inland than on the coast (slightly, by 1.3 pp) with the same rate of change over the period 2013 – 2019 was in the Netherlands, which corresponds to the data on the magnitude of the percentage change in GDP (slightly higher inland in the relationship between 2012 and 2018). However, it is with the contribution of economic sectors based on trade and the exploitation of marine resources that the Netherlands generates a national income of well over EUR 40 000 per inhabitant, which places it, along with the Scandinavian countries, at the top of the European Union.

As noted, the proposed division is justified by the settlement network hierarchies of the individual countries. Among countries with a maritime orientation, only Spain does not have a capital as a city located directly on the sea, or historically and functionally linked to a port located now or in the past in the immediate vicinity or near a city, and formerly served by regular sea deliveries. The latter is the case for London, Dublin and Rome, mentioned earlier. The United Kingdom, Ireland and Italy, respectively, are among those countries whose settlement network structure is not dominated by coastal metropolises. In the others, at least two of the three largest cities or even the next largest in terms of population are coastal centres. In Sweden, Norway, Denmark and Greece it is all three major cities, in Portugal it is two. The attribution of maritime-oriented status to Latvia and Estonia may provide a strong argument for the thesis of the importance of coastal urbanisation. Both have a small territory stretching along the sea coast with at most a secondary role in global trade flows. Unlike Lithuania, however, their economic structure and settlement network – and consequently their development and civilisation success – is linked to the coast.

The case of Spain is of a different nature. From the 16th century onwards, its economy became increasingly dependent on maritime trade. This did not change the nature of the state and its economic system to the same extent as in the case of the UK or the Netherlands, but it was reflected in the concentration of population potential in the coastal cities and still today significantly influences the share of the GDP of the coastal regions in the overall potential of the state. At the same time, the power of the largest capital city and the vastness of the inland territory have had the effect of counter balancing the overall inclination of development processes towards the coast. To some extent, these patterns can also be applied to Britain, Ireland and Italy, where factors have interacted with the absence or weakening throughout history of strong, dominant maritime centres directly on the sea.

One might be tempted to theorise that, with the exception of Scandinavia, no major European country can achieve maritime state status to any significant degree. France was later than its rivals on the Iberian peninsula to embark on the path of overseas expansion, and for this reason, among other things, it is characterised today by even less development potential tilted towards the coasts, while Germany and Poland (or the Polish lands in the periods of partition) have in their economic history been influenced by a shorter coastline giving access at most to an enclosed sea far removed from the continental centres of trade. It was further minimised by the small number of river mouths providing opportunities for the development of important urban and port centres. Both countries were therefore based on industrial (Germany) or agricultural (Poland) development of inland areas.

It is legitimate to pose a verification question, reversing the logic of the issue of the relationship of the development of the coastal potential of individual states with the scale of coastal settlement and the existence of coastal cities: are there cities whose location within certain national boundaries distorts the picture of their potential that could be associated with the length of the coast or other natural conditions? The example of Poland, to which Szczecin was annexed as a result of political decisions after the Second World War and after many centuries of political disagreement, is symptomatic. Without this event, the country's coastline, which is now almost 450 kilometres long, would only be strengthened by Gdańsk (within the Tricity) as a significant urban centre (Szczecin is a port city but not directly on the coast).

Belgium, too, is a country whose maritime character remains to a limited extent accentuated by strong urban structures in the face of the inland location of Antwerp and the small size of Ostend. Certainly, the 'underestimation' applies to Italy, where the potential of the former coastal dominators in the north of the peninsula has diminished and, apart from Palermo, no other city in the south or on the east coast has risen in importance. Besides, it is difficult to identify a case of a city that would give a disproportionate maritime importance to a country that does not have a long enough coastline. It can therefore be concluded that in the case of coastal cities their distribution is fairly representative of national settlement network hierarchies.

5. Conclusion

The maritime character of European countries is being problematised. Following the end of the colonial era and structural shifts in global production and trade relations, individual states have taken different positions in multilateral relations than in the past, and have experienced internal shifts in potentials and development vectors. The proposed typology can serve as a reference for broader comparisons, compilations and classifications. The proposed typology can serve as a reference for broader comparisons, compilations and classifications. While coastal cities remain enduring elements of the links between national economies and coastal location as well as international trade, their strength is counter balanced by the potential of inland areas.

However, new perspectives are emerging, such as the development of offshore wind energy or innovative approaches to the exploitation of marine resources. Especially for countries in the north of the continent, this can be a factor in maintaining and shaping the competitiveness of national economies.

Given the scale of the concentration of the population potential, the coastal character of the economy there is in direct relation to the dominance of coastal cities in the structure of the settlement network. This still translates into the highest GDP per capita. At the same time, it shows what an important part of the national economy lies in potentially vulnerable areas in the context of climate change and rising sea levels. This requires not only being aware of the constant changes but also of the possibility of their rapid occurrence in the form of some kind of force majeure, which should be a clear signal for the authorities to prepare appropriate spatial plans both for the settlement network and for locating the industry so that it can take advantage of the still existing asset of the coastal location, on the other hand so that investments are located in less exposed locations.

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