

MEDITERRANEAN ROAD RING

Povratak mediteranskog bazena na važno mjesto u kontekstu globalnog razvitka ovisi u velikoj mjeri o stabilnosti regije. Ukupna stabilnost u regiji povezana je s postojanjem ekonomske ravnoteže i stabilnog rasta. Autorova procjena razvojnih kontroverzija vođena je neadekvatnošću suvremene razvojne teorije. Druga polovina 20. stoljeća bogata je neuspjesima razvojnih strategija i uzaludnim pokušajima smanjivanja razvojnog jaza između razvijenih i manje razvijenih zemalja. To su razlozi koji su autora potakli na predlaganje ideje "mediteranskog cestovnog prstena" kao moderne autoceste koja bi "slijedila" mediteransku obalu na ekološki prihvatljivoj udaljenosti.

Conditions for Economic Cooperation in the Mediterranean and its limits

Economic cooperation of Mediterranean countries is both historically founded in real economic interests and necessary as means of optimizing the internal volatility of business activities and minimizing external diseconomies. Thanks to a variety of different elements that it combines, the Mediterranean was the cradle of the world's civilization, but that unity of disparate elements can also trigger the finite cataclysm of that very civilization.

Thanks to the competition of basic cultures, religions, peoples and economies, the Mediterranean has witnessed some of the most stupendous achievements of the human race. Yet, at the same time the Mediterranean has seen some of the most cruel religious and ethnic conflicts and pogroms, often at the unprecedented human and material cost.

Present day developments confirm the Mediterranean's historic role in more ways than one. Due to a deep development gap between different Mediterranean

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countries and national and religious differences the Mediterranean can now be divided into the rich European north, the poor African south and eastern areas in a constant state of war, i.e. the Balkans and the Asian rim. Yet, along with all those Mediterranean characteristics one should also take into account that each of the countries, whether rich or poor, is also troubled by internal strifes. Thus, Spain is troubled by the problem of Cataluna. France by waves of immigrants from its former (Mediterranean) colonies. The east coast of the Adriatic sea has been marked by conflicts resulting from a belated formation of nation states (Slovenia, Croatia, Montenegro, Albania). Differences between Turkey and Greece are a stumbling block between Europe and Asia. Confrontations in the area comprising Lebanon, Israel, the Palestine and Jordan have created one of the most enduring trouble spots on our planet. Algiers and other Arab countries in the Mediterranean have been shaken by internal conflicts with the Islamic fundamentalism, etc.

Of course, the momentum and the persistency of the aforementioned trends bring into question any attempts to stabilize the region through economic cooperation and the resulting prosperity. Namely, possible effects of economic relations are greatly undermined and limited by general developments. Yet, in the light of frequent deadlocks, lulls and sidetracks that other forms of regional cooperation have been subject to, economic cooperation seems to offer a possible way out of stagnation. Economic interests, as manifested in market signals, could become a rational stimulus for growth of all Mediterranean economies. A *conditio sine qua non* for that is fostering of entrepreneurship and private property, as well as transparent and open national markets. However, the above mentioned trends and the developmental gap clearly indicate that market signals will be a necessary albeit not a sufficient condition for a balanced development of Mediterranean economies. We believe that national governments should coordinate their economic policies in the interest of free enterprise and unhindered development of an all-Mediterranean market.

Our research has proved that fast development of the market economy hinges on physical (roads, railways, energy, etc.) and intellectual (education, medicare) infrastructures. Furthermore, we have concluded that due to market disequilibrium between demand and supply, infrastructure functions as a consequence and not a prerequisite of trade activities. Hence, the national governments should coordinate their efforts to create additional demand for infrastructure. Lack of infrastructure is clearly evident not only in some African but also in some European countries (Albania, Greece), all of which are difficult to access due to poor communications. Hence our idea for a Mediterranean road ring as an important requirement for a faster economic growth.

Macroeconomic Indicators of the Development of Mediterranean Countries

Total area of the countries comprising the Mediterranean region is 8.4 million square kilometers (see table 1), an equivalent of 6.3 per cent of the world's land area. The region is inhabited by 403 million people (see table 1), 7.1 per cent of the world's total. The Mediterranean's population is larger than that of either of the two largest integrations (the 15 countries of the EU have 373 million inhabitants and NAFTA 392 million) and much larger than that of Russia (148 million). Average population density in the region is 48 inhabitants per square kilometer (see table 1), varying from 3 inhabitants per square kilometer in Libya and 1,190 in Malta. Measured by the size of its population, the region of the Mediterranean is a very respectable market.

Table 1

MAIN MACROECONOMIC INDICATORS FOR THE MEDITERRANEAN COUNTRIES

Country	Surface area km ²	Mid-year population estimate (000) 1996	Density per km ² 1996	GNP per capita \$ 1995	Labor force millions, 1995	Urban population as % of total popul. 1995
Spain	504782	39181	78	13580	17	77
France	543965	58041	107	24990	26	73
Italy	301268	57460	191	19020	25	66
Slovenia	20251	1951	96	8200	1	64
Croatia	56542	4494	80	3250	2	64
B&H	51129	2656	52	..	..	..
Albania	28748	3249	113	670	2	37
Greece	131990	10539	80	8210	4	65
Turkey	774815	62484	81	2780	28	70
Syria	185180	15609	84	1120	4	53
Lebanon	10400	3776	363	2660	1	87
Israel	21056	5422	257	15920	2	..
Egypt	1001449	63575	63	790	21	45
Libya	1759540	5445	3	..	..	..
Tunisia	163610	9020	55	1820	3	57
Algeria	2381741	29183	12	1600	9	56
Morocco	446550	29779	67	1110	10	49
Malta	316	376	1190	..	..	..
Cyprus	9251	745	81	..	..	..
TOTAL	8392583	402985	48		155	

Source: World Development Report 1997, SLJH - 97.

NOTICE: Without Montenegro.

Total available labor force in the Mediterranean countries amounts to about 155 million people, 5.8 per cent of the world's total. Labor force total is below the world's average as the result of high emigration rate and low quality of the population. Based on those elements we can conclude that the region has untapped potentials and should develop faster in order to curb emigration and pave the way for the resettlement of deserted areas. As this labor would return from developed countries that would be beneficial for them too, as they would be able to reduce public spending and mitigate the effects of recession.

When looked at from the point of view of economic development, measured as GNP per capita, Mediterranean countries present a very variegated picture, ranging from \$ 670 per capita in Albania to \$ 24,990 per capita in France, which is 37 times more (see table 1). As many as six countries (Albania, Egypt, Morocco, Syria, Algiers and Tunis) have GNP below \$ 2,000, in three countries (Lebanon, Turkey and Croatia) it is between \$ 2,000 and \$ 5,000, in two (Slovenia and Greece) between \$ 5,000 and \$ 10,000 and in four (Spain, Israel, Italy and France) over \$ 10,000.

Total output of the Mediterranean region is about \$ 3,735 billion (1995) (see table 2), 13.4 per cent of the world's total and about 50 per cent of the output of either of the two largest integrations (the EU - \$ 7.3 billion and NAFTA - \$ 7.2 billion). This is another indicator showing that we are dealing here with a large market whose level of development is far below that of the large integrations. That and indications of the region's untapped potentials both underline the need for a closer cooperation between the Mediterranean countries and for the creation of conditions leading to a closer economic integration and strengthening of mutual ties.

Table 2

SELECTED INDICATORS OF THE MEDITERRANEAN COUNTRIES'
ECONOMIC DEVELOPMENT

Country	GDP million \$ 1995	Average annual growth rate GDP (%) 1990-95	Agriculture % of GDP 1995	Trade (% of GDP) 1995	Exports million \$ 1995	Imports million \$ 1995
Spain	558617	1,1	3	47	91716	115019
France	1536089	1,0	2	43	286738	275275
Italy	1086932	1,0	3	49	231336	204062
Slovenia	18550		5	113	8286	9452
Croatia	18081		12	93	4633	7582
Albania	2192	1,4	56	52	205	679
Greece	90550	1,1	21	57	9384	21466
Turkey	164789	3,2	16	45	21600	35710
Syria	16783	7,4			3970	4616
Lebanon	11143		7	70	982	6721
Israel	91965	6,4		69	19046	29579
Egypt	47349	1,3	20	54	3435	11739
Tunisia	18035	3,9	12	93	5475	7903
Algeria	41435	0,1	13	57	8594	9570
Morocco	32412	1,2	14	62	4802	8563
TOTAL	3734922				700202	747936

Source: World Bank Atlas 1998, SLJH - 97.

NOTICE: Without Montenegro, B&H, Malta, Cyprus and Libya.

Between 1990 and 1995 all the Mediterranean countries had a positive GDP growth rate (ranging from 0.1 per cent in Algiers to 7.4 per cent in Syria), save for Slovenia and Croatia, whose GDP rate was negative (see table 2) due to problems generated by economic transition and wars.

When measured by participation of agriculture in their GDP, developmental levels of different Mediterranean countries are also quite varied. Thus in 1995 Albanian agriculture amounted to 56 per cent of its GDP, as opposed to 2-3 per cent in France, Italy and Spain (see table 2).

Total exports of the countries in question amounted to \$ 700 billion (1995), which equals 13.6 per cent of the world's total. At the same time their imports reached \$ 747 billion (1995), an equivalent of 14.2 per cent of the world's imports. From that we can see that the Mediterranean countries are bigger importers than exporters, as their exports amount to only 93.6 per cent of the imports. Net exporters are only France and Italy, whereas the net value of imports in all other Mediterranean countries exceeds that of their exports.

Transport and the Development of Underdeveloped Areas

A futuristic idea that the modern civilization will be saved, inter alia, by advancements in the area of transport is partially corroborated by the history of the world's economic development. Economists have long been studying the relation between changes in the area of transport and the development of economy as a whole, i.e. economic growth. The interest in this issue is not merely academic. Marked differences in the level of prosperity between different countries have prompted efforts for a faster economic growth of less developed economies through big investments into different kinds of infrastructure.

Transport has been traditionally viewed as an important factor of economic development whose advancements greatly stimulate the growth of production. Already in 1922 Marshall argued as follows: "... the dominant economic factor in our era is the development of transport, not industry". Similar views were propounded by Rostow (1960), who saw the introduction of railways as the key historic factor of growth and development in the USA, France, Germany, Canada and Russia. Button (1993) distinguishes between four historic periods in the revolution of transport and logistics:

- (1) Starting in the 13th century, when people started transporting goods on water, thus developing a logistic system that linked towns on rivers and in coastal regions.
- (2) Starting in the 16th century ("the golden era") which was marked by phenomenal advancements in navigational transport and fast growth of trade between India and the European capitals (the main centers were Lisbon, Antwerpen and Amsterdam).
- (3) Starting around the 1850's, which was marked by the industrial revolution, when the invention of the steam engine brought about new means of transport and opened new markets, including those in North America.
- (4) Starting in the 1970's, which has been marked by growing importance of information and flexible transport systems (just-in-time systems and the material requirements planning).

In all those periods transport had direct and indirect (including multiplicative) effects on economic growth. Hunter (1965) even established a causal relation between low cost of transport and economic growth, arguing that the industrial revolution succeeded thanks to a revolution in transport technology that had preceded it. Unlike those authors, there have been others (Fogel, 1964) who claimed that the 19th century America had the potential for growth even without the appearance of railways.

Those opposed opinions and evidence have recently given rise to a view that only good transport could fuel economic growth. Economic development is now seen as a complex process in which transport plays a very subtle role. Transport, which is a necessary but not a sufficient condition for development, can free capital in one area and channel it towards another where it can be used in a more productive way. Seen in this perspective, transport is more a facilitator of development than its creator.

All that notwithstanding, in many developing countries social and economic development and territorial integration are largely hampered by bottlenecks in the area of transport. Lack of transport facilities there obstructs the development of other kinds of intellectual infrastructure (education, medicare). Furthermore, insufficient transport capacities hinder the distribution of modern technology and know-how as inputs in agriculture and agriculture's linking with other markets. Consequently, most developing countries, whose economies are dominated by agriculture, have low agricultural outputs.

However, some economists believe that the underdeveloped countries sometimes invest too much of their mostly scarce resources in transport. From that we can conclude that at a certain point of economic development growth potentials can be maximized only if a certain level transport capacity is achieved. Thus, there is an optimal transport capacity for each stage of economic development. An adequate basic transport system is obviously a *conditio sine qua non* of modern economic development but it remains to be seen whether that means that its opportunity costs are necessarily justified. So far different empirical evidence has not helped resolve the dilemma, because extensive research in that field has produced disparate and often even contradictory conclusions (Button, 1993).

Transport is generally believed to have four-fold function in economic development (Fromm, 1965): Firstly, it makes possible the input of factors in the production process (the movement of people and goods between centers of production and consumption). Secondly, improvement of transport (lowering of transport price) enables an outward shift of production possibility curve and reduces the need for labor and capital inputs in the production process. Thirdly, higher mobility makes possible a more productive use of factors and, fourthly, transport enhances wellbeing by facilitating peoples' access to social services and enabling them to get hold of better and more numerous public goods.

Considering that there is a necessary disequilibrium of economic growth there are two possible strategies of relating economic development to the development of transport: one based on “surplus” capacity and another based on “lack of capacity”. Which of these two strategies will better fit any given country depends on its geographical and demographic characteristics. Most underdeveloped countries can be categorized in one of the following four categories (Fromm, 1965): (1) densely populated tropical countries, (2) tropical countries with low population density, (3) moderately mountainous countries with low population density, but with high concentration of the people in fluvial plains, (4) scarcely populated desert regions with concentration of the people along the rivers, the coastline and irrigation canals.

The Mediterranean region reflects different characteristics of all the four categories, as it consists of countries that each needs a different transport system and capacity. Yet, what this paper is meant to purport is that all those countries should be connected by a basic road network (“communication grid”) that would get rid of the bottlenecks and integrate regions different by economic structure and level of development. Although the railways characterized the economic development in the 19th century, their colonial structure (built to serve the interests of capitals, not the colonies) make them less important today than naval transport and roads. The importance of roads is steadily growing due to their importance for the establishment of modern flexible transport systems (just-in-time) and for a dispersed transport system known as “door-to-door” delivery.

In principle, construction of transport infrastructure can benefit both the underdeveloped and the developed countries. To the underdeveloped countries, the improvement of transport infrastructure opens the door to larger exports, which in turn leads to larger production and better use of the advantages of economies of scale. However, considering that demand for transport capacity is derived from the demand for goods (in this case the demand for goods from the developed countries) benefits from augmented scale and quality of transport infrastructure will differ from one country to another (Čavrak, 1996).

The improvement of transport services (lower transport cost) is a prerequisite for higher less developed countries exports and for proportionately higher imports by the developed ones. Such improvements result in the growth of trade in less developed countries. The developed countries stand to profit from a drop in the price of import goods and the underdeveloped ones from larger production in relatively high cost industries. Distribution of benefits generated in that manner largely depends on elasticity of the demand in the developed and underdeveloped countries and on the relative prices. So far empirical studies have underlined a serious problem of underdeveloped countries which usually shoulder a major share of the transport costs. The system that channels the benefits towards the developing countries is further bolstered by international finance and other mechanisms that favor the developed countries.

From the aforementioned it can be concluded that investments in transport infrastructure do not automatically boost economic growth in the underdeveloped countries. That is why those issues must be approached in a coordinated manner and with due respect to their complexity. Multilateral cooperation between the Mediterranean countries is one of the most efficient ways to optimize practical efforts for the improvement of transport communications.

Relative Development of Road Infrastructure and Motorization

France and Italy have the most developed road networks, all other countries lagging far behind (see table 3). The quality of roads, measured by the percentage of roads with modern carriage-way (asphalt) is highest in the most developed countries (Italy, France, Spain, Israel) and lowest in Turkey (23 per cent), Albania (30 per cent) and Morocco (50.3 per cent).

The following breakdown of the road infrastructure reflects the World Bank's "normalized road index", which compares a country's road infrastructure to expected state, relative to the size of the population, its density, per capita income, urbanization level and other regional variables (see table 3). A value of 100 denotes a country with normally developed road infrastructure (fully corresponding to expectations). A value above 100 denotes an above the average road infrastructure (higher than expected). Here it should be noted that some countries with a very low percentage of paved roads, such as Turkey, exceed the expectations, whereas Italy, whose percentage of paved roads is nearly 100, scored considerably below 100 on the expectations index (57). To be fully appreciated the aforementioned values should be accompanied by a number of explanations, but that falls outside of the scope of this paper.

Table 3

INDICATORS OF THE DEVELOPMENT OF ROAD NETWORKS
 IN THE MEDITERRANEAN COUNTRIES

Country	Total length of roads 1995	Paved roads, %, 1995	Normalized road index ¹ 1995	Goods transported mill. ton-km 1995	Vehicles per 1000 people 1994	Vehicles per km of road 1994
Spain	163564 ²	99.0	102	582	454	49
France	964759	..	122	1275	517	37
Italy	305067 ³	100.0	57	..	541	..
Slovenia	14836	..	85	4	349	47
Croatia	26928	81.5		4	158	28
Albania	18000	30.0	28	3	15	6
Greece	38606	91.7	154	..	282	23
Turkey	61245	23.0	192	112,515	62	9
Syria	..	71.0	..	..	..	..
Lebanon	..	95.0	..	..	..	..
Israel	14700	100.0	98	..	240	93
Egypt	..	78.0	111	..	28	32
Tunisia	..	78.8	183	..	..	..
Algeria	..	68.9	161	..	33	10
Morocco	..	50.3	23	12	42	18

Source: World Development Report 1997; World Bank Atlas 1998; World Development Indicators 1997; Annual Bulletin of Transport Statistics for Europe, 1997, UN New York - Geneva; SLJH - 97.

NOTICE: Without Montenegro, B&H, Malta, Cyprus and Libya.

¹ Normalized road index is the total length of roads in a country compared with the expected length of roads, where the expectation is conditioned on population, population density, per capita income, urbanization, and regional-specific dummy variables. A value of 100 is "normal". If the index is more than 100, the country's stock of roads exceeds the average.

² 1994.

³ 1992.

The level of motorization also differs considerably from country to country. Measured by the number of vehicles per 1,000 inhabitants it varies from 15 in Albania to 541 in Italy. If we measure the number of vehicles per kilometer of roads we will come up with a similar picture. The lowest number of vehicles per kilometer is detected in Albania (6), Turkey (9) and Algiers (10) and the highest in Israel (93) and Spain (49) (see table 3).

The Mediterranean Road Ring

Based on an analysis of the economic activity in the Mediterranean region and a cautious assessment of potential effects of transport on a faster economic development, we have come up with the idea of a Mediterranean road ring as one of the prerequisites and engines of a more balanced development.

By the road ring we mean a 10,000-15,000 kilometer modern motorway that would skirt the Mediterranean coast from Gibraltar via Bosphorus and Suez to Tangier. The motorway would have four lanes and run along the coast at an ecologically acceptable distance. Spain, France, Italy etc, have already constructed the roads that could be considered a part of the future ring. The project would have several short term and long term effects.

The short term effects of an investment of approx. \$ 80-120 billion would be the employment of the construction machinery in the developed countries and of labor in the less developed Mediterranean ones, as well as the multiplicative effects of the project on other industries.

The project could make possible the development of other kinds of infrastructure. Thus, along the motorway one could lay electric power cables, water supply and pipe systems, a fast railway track, etc.

Furthermore, the project could lead towards a more rational allocation of resources between different markets. Namely, the European part of the Mediterranean lacks energy and the African one fresh water and water for industry. The project would enable the countries in Africa and on the Arab peninsula to produce electric power near energy resources and transport it to Europe by cables. Alternatively, oil and gas could be sent to European destinations through pipelines. On the other hand, a water supply system would make it possible for Europeans to transport water to far-away African destinations.

The construction of the road ring and the accompanying infrastructure would have similar effects on relocation of some industries, such as chemical industry, the production of construction material, etc., to more profitable locations.

The most interesting potential effect of the Mediterranean Road Ring would probably be the development of tourist industry. It would enable access to the remote

areas of the Mediterranean coast turning them into new attractive tourist destinations. New resort areas, hotels etc. would enlarge tourist output and increase employment in the region, thus diminishing incentive for the workforce migration from less developed to more developed Mediterranean countries.

To reiterate: what we are suggesting here is just a possible way of cooperation of Mediterranean countries in the specific area of road construction and transport. We are fully aware that in order to be carried out any plan must go through a long and multiple process of economic verification and feasibility analysis. Yet, by calling for the sounding of this initiative by experts, we have in effect tried to point to a specific role of economy and economists in the modern world.

Acting upon fully justified concerns for the free market and the market allocation of resources, the economists have been mostly focusing on interpretation of economic reality so far. Yet, sharp fluctuations of current business activities in certain national economies and a growing long term development gap between different countries, call on economists to come up both with new explanations and with initiative for changing economic environment. We will deem this paper worthwhile if it proves to be even a small step towards shifting the attention in that direction.

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MEDITERANSKI CESTOVNI PRSTEN

Sažetak

Povratak mediteranskog bazena na važno mjesto u kontekstu globalnog razvitka ovisi u velikoj mjeri o stabilnosti regije. Ukupna stabilnost u regiji povezana je s postojanjem ekonomskog ekvilibrijuma i stabilnoga rasta. Pored nacionalnih, religijskih, kulturoloških i civilizacijskih raznolikosti i oprečnosti, izgledi za mediteransku suradnju opterećeni su jakim razvojnim jazom između mediteranskih gospodarstava.

Procjena razvojnih kontroverza vođena je neadekvatnošću suvremene razvojne teorije. Druga polovina 20. stoljeća bogata je neuspjesima razvojnih strategija (u obliku formaliziranih modela) i uzaludnim pokušajima smanjivanja razvojnog jaza između razvijenih i manje razvijenih zemalja. Zato se, umjesto oblikovanja nove teorije ili njezina formaliziranog modela, ovdje predlaže mediteransko "otvaranje razvitku", "viškom infrastrukturnih kapaciteta". Pod tim se podrazumijeva visoko investiranje u ubrzani rast infrastrukturnih objekata, a osobito investiranje u modernu cestovnu mrežu uz Sredozemno more, kao preduvjet tržišnog otvaranja i brzog ekonomskog rasta cijele regije.

Ti su razlozi potakli predlaganje ideje "mediteranskog cestovnog prstena", kao moderne auto-ceste koja bi "slijedila" mediteransku obalu na ekološki prihvatljivoj udaljenosti. Kao pojedinačan projekt, taj bi projekt imao višestruke ekonomske efekte u otvaranju i povezivanju mediteranske obale od Gibraltara, preko Bospora i Sueza, do Tangera. Važnost projekta pozitivno bi utjecala na ekonomski rast, na zaposlenost, na turizam i na urbanizaciju cijele regije i svake pojedine zemlje.