

Implications of Comprehensive Peace on the Middle East's Transportation Sector

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The spread of peace in the Middle East is expected to bring major reductions in military spending, freeing up funds that could be used in the transportation sector which is, at present, underdeveloped. A case study of 10 Middle Eastern countries shows that if these countries were to cut their defense budgets, as a percentage of the gross national product, to the world average, total annual savings would amount to more than \$24 billion (U.S.), \$2 billion of which could be spent in the transportation sector. As a result, countries such as Israel, Syria, and United Arab Emirates could expect to increase transportation spending by more than 80 percent.

The economic development of any nation depends largely on the development of its transportation infrastructure. An efficient intra-country transportation network provides accessibility and mobility for the movement of people and tradable goods. Furthermore, well-developed inter-country transportation networks are vital for trade between neighboring countries.

Most countries in the Middle East have inefficient transportation infrastructures. Government spending has been inadequate and below the world average. Nearly all urban areas in the region suffer from recurring traffic-related congestion. The main reasons for this are budget constraints, dense urban populations, and other priorities, such as defense spending.

The general perception in the Middle East, and probably the world, is that the Arab-Israeli conflict is the major source of instability in the region. This perception is wrong: Iraq-Iran, Arab-Turkish, and Arab-Arab rivalries represent long-standing conflicts. The recent crisis in Kuwait demonstrates this clearly. However, there is no doubt that a comprehensive peace between Israel and its Arab neighbors would be a major step toward stability in the region.

The strengthening of economic and political relations and genuine arms reductions are happy consequences of peace. Funds derived from reduced military spending can be allocated to needy areas. In this paper our discussion is limited to transportation, a sector in desperate need of financial aid. We examine the effect of a "peace dividend" on 10 countries: Egypt, Iran, Israel, Jordan, Kuwait, Oman, Saudi Arabia, Syria, United Arab Emirates, and Yemen. All these countries have been affected, directly or indirectly, by the Arab-Israeli conflict. It is hoped that this discussion will help motivate other Arab and Israeli intellectuals to continue cooperative research to benefit the cause of peace and the quality of life in the Middle East.

REGIONAL MILITARY EXPENDITURE

Middle Eastern countries make up about 4 percent of the world's gross national product (GNP) and about 3.5 percent of its popula-

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tion (1). Their average defense spending between 1980 and 1988 was about 9.1 percent of the world's total (2). Although military expenditure in the Middle East constitutes a small percentage of the world's total, it is significantly higher than world averages in a number of ways:

- Military expenditure as a percentage of GNP (from 1980 to 1988 the total average military expenditure for the 10 countries was more than \$42 billion, 6.1 percent higher than the world average);
- Military imports as a percentage of total imports (from 1980 to 1988 the total military imports for the 10 countries were 8 percent of the total merchandise imports, compared with the world average of 2.1 percent); and
- Central government spending (from 1980 to 1988, 29 percent of the total government expenditure for the 10 countries was allocated to the military, compared with the world average of 16.5 percent over the same time period).

Between 1980 and 1988, the total average military expenditures by the 10 countries were more than \$42 billion, or about 14.9 percent of the GNP (Table 1) (3). However, both Iran and Kuwait were excluded because their military spending ratio is below the world average. The world average during this period was 4.9 percent of the GNP. Of the \$42 billion, Saudi Arabia, Israel, and Iran accounted for more than 70 percent, while Jordan and Yemen made up only 2.3 percent. In fact, the military spending-to-GNP ratio of most countries in the region is higher than the world average (3).

Available data indicate that average annual military imports in the Middle East between 1980 and 1988 amounted to more than \$5 billion, or about 8 percent of total merchandise imports. The world average ratio during this period is estimated to be 2.1 percent. Clearly, reductions in military expenditure to average world levels would release much funding, which could improve the balance of trade, reduce debt, and improve life in the area.

MILITARY EXPENDITURE CUTS

The transportation infrastructure in the Middle East is inadequate and underfunded. To increase spending and improve the situation, governments might (a) borrow or otherwise obtain financial aid from abroad; (b) increase local taxes; or (c) cut military spending. Increasing foreign debt is undesirable, and foreign aid in a global recession is becoming harder to get. Obtaining the funding by increasing local taxes is an unwelcome option. With the growing prospects of regional stability, providing money through defense cuts appears to be the best option.

In this case study we examine the effect of reducing the amount of GNP spent on the military to the world average of 4.9 percent.

TABLE 1 Military Expenditures and Their Proportion to GNP Averaged During the Period 1980 to 1988 (in Millions of U.S. Dollars)

Country	GNP	Military expenditures	Military expenditures as percent of GNP
Egypt	37,679	3,139	8.3
Iran	192,016	5,300	2.8
Israel	26,191	5,710	21.8
Jordan	5,522	502.7	9.1
Kuwait	28,014	1,257	4.5
Oman	6,944	1,686	24.3
Saudi Arabia	102,694	19,859	19.3
Syria	14,177	2,801	19.8
United Arab Emirates	27,694	1,803	6.5
Yemen	4,656	454	9.8
Total	445587	42511.7	14.9*

* Iran and Kuwait were excluded since their military spending ratio is less than 4.9%. Source: IMF Government financial statistics (different issues).

Table 2 shows the average annual funds released in our scenario (countries whose spending ratio is less than 4.9 percent are not considered). Total average annual savings are about \$25 billion for the remaining eight countries.

More savings would come as transportation spending on military activities is reduced. Unfortunately, these savings cannot be quantified because the information required is classified. Addi-

TABLE 2 Scenario in Which Military Expenditures Are Cut as a Percent of GNP to Match World Average of 4.9 Percent of GDP

Country	Military expenditure savings in millions of U.S. dollars
Egypt	1292.7
Iran	---
Israel	4426.6
Jordan	232.1
Kuwait	---
Oman	1346.1
Saudi Arabia	14826.8
Syria	2105.8
United Arab Emirates	446.0
Yemen	226.2
Total	24,902.2

tional benefits can be expected from the conversion of military transport facilities, including airports, naval bases, and military roads, to civilian use. For instance, with only two passenger-oriented airports in Jordan (in Amman and Aqaba), intercity air transportation is limited (rail links are also not available). With military airports located in different areas across the countries in question, the conversion of some of these airports for civilian use would ease the movement of both people and goods. In addition, such conversion would enhance the economic development of remote areas.

Because military bases may contain materials used in the production of chemical, nuclear, or biological weapons, additional funding should be allocated for the conversion of these facilities in an environmentally safe way. Advanced recycling techniques are needed to dismantle and destroy such weapons and store or convert their components safely.

WHERE THE FUNDS WILL GO

Table 3 presents government expenditures on transportation and the relative sizes of the transportation sectors as a percentage of gross domestic product (GDP) for the 10 countries in this study. On average, the transportation sectors contribute 9 percent of the GDP in these countries (4,5). Table 4 shows the percentage increase in government spending on transportation that might be expected. The numbers were computed based on the relative share of this sector as a percentage of GDP (Table 3). Israel, Syria, and United Arab Emirates can expect to increase government spending by more than 80 percent. In the next section are details of areas in the transportation sector that would benefit from increased government spending. Because of a lack of detailed data, it is difficult to specify exactly how much funding will be allocated to each subsector.

TABLE 3 Total Government Expenditures Versus Government Transportation Expenditures Averaged During the Period 1981 to 1990 (in Millions of U.S. Dollars)

Country	Relative share of Transportation sector as percent of GDP	Total expenditure	Transportation expenditure
Egypt	9.9	18627	571
Iran	9.1	52007	2818
Israel	9.3	20361	497
Jordan	9.2	1902	126
Kuwait	7.8	9375	448
Oman	8.7	4035	340
Saudi Arabia	7.4	71291	6014
Syria	9.3	6325	226
United Arab Emirates	7.2	4350	38
Yemen	8.1	1673	68

TABLE 4 Percent Increase in Government Transportation Spending Under the Defense Cutback Scenario in Table 2

Country	Transportation expenditure before funds allocation	Transportation expenditure after funds allocation*	Percent increase
Egypt	571	699	22.4
Iran	2818	---	---
Israel	497	909	82.9
Jordan	126	147	16.7
Kuwait	448	---	---
Oman	340	457	34.4
Saudi Arabia	6014	7108	18.2
Syria	226	423	87.2
United Arab Emirates	38	70	84.2
Yemen	68	87	27.9

* on the basis of the relative share of the transportation sector as percent of Gross Domestic Product (GDP).

Flow of Crude Oil

Much of the world is dependent on crude oil from Persian Gulf countries. Peace and stability in the region would bring many advantages and could lead to:

- The reopening of the Trans-Arabian Pipeline (Tapline) from the Saudi oil fields via Jordan to the port of Haifa in Israel. It was closed in 1948. Until recently, only Jordan has used it as a major source of oil. It is expected that Israel, Jordan, and Saudi Arabia would benefit from this reopening. Israel's reliance on foreign crude oil has increased in the wake of the 1979 Camp David agreement and the return in 1982 of the Sinai to Egypt. With the pipeline in operation, Israel could satisfy some or all of its crude oil demands in return for port privileges and exported merchandise. Some consumers of Saudi oil would find the Israeli ports more convenient than the Arabian Gulf-Red Sea routes. Kuwait, too, could benefit from access to the Mediterranean. Syria is expected to allow Iraq to resume pumping crude oil through the Iraq-Syria-Lebanon pipeline, presently closed.

- The diversion of funds for the exploration and development of oil and natural gas resources in Jordan and Syria. Israel would also benefit from a natural-gas pipeline in the gulf. Gas-driven turbines can generate electricity, which is an exportable commodity.

Land Transportation

The construction of efficient international roads and railways between Middle Eastern countries would facilitate the flow of merchandise and labor. In fact, the Camp David agreement called for the building and maintenance of highways between Egypt, Israel, and Jordan near Eilat with guaranteed free and peaceful passage of persons, vehicles, and goods between Egypt and Jordan.

Besides improving the flow of goods, an efficient international transportation network would ease cultural tensions and promote tourism in the region. All countries in the area are considered favorable for tourism. However, increasing intra- and inter-country tourism requires developing, investing, and expanding the transportation network.

More investments can be made in the field of intraregional container transportation by using container transshipment technology. Investments are also warranted in projects designed to increase the capacity of urban arterials and highways and improve safety conditions on those facilities.

Public Transportation

Public transportation, especially in the Arab countries, has not developed enough to satisfy the needs of commuters, and the demand for better services is growing rapidly. Governments heavily subsidize mass transit services, but these subsidies are not enough to improve and expand services. Recent events such as the Persian Gulf War and massive relocations of people (especially in Jordan) have only aggravated the problem.

An influx of funds to this sector could improve the present system's quality and accommodate future demand, increasing access to cheap mobility for more people across a wider area.

Village and Agricultural Roads

Most transportation networks in the region, excluding Israel, do not extend over all rural areas. In many cases nearby villages are not connected to each other and are connected to the nearest major town only by a narrow road. Because many of these outlying areas are agriculturally productive but inaccessible, no significant economic growth is registered.

Table 5 shows how village and secondary road lengths have evolved in Jordan. The figures reflect a lack of continuous or significant growth, mainly due to a lack of funds. By contrast, Saudi Arabia's wealth and emphasis on agriculture have resulted in the construction of agricultural roads. Table 6 shows clearly how the network has grown between 1970 and 1990.

It is hoped that after a peace treaty, a country's underemployed army could play a major role in the construction of agricultural and village roads.

TABLE 5 Road Length Classification Development in Jordan (in km)

Year	Village Roads	Secondary Roads	Primary Roads
1985	2088	869	1928
1986	2134	879	2005
1987	1428	1533	2354
1988	1525	1606	2396
1989	1691	1626	2548
1990	1822	1664	2521

Source: Transportation Bulletin of ESCWA, United Nations, No. 1 December, 1985.

TABLE 6 Road Length Classification Development in Saudi Arabia (in km)

Year	Paved Roads	Agricultural Roads
1970	8440	3487
1975	12167	8510
1980	21581	24186
1985	29655	50655
1990	38000	78000

Source: Transportation Bulletin of ESCWA, United Nations, No. 1 December, 1985.

Road Maintenance and Rehabilitation

Road length over the whole region has increased since 1972, with a concomitant increase in maintenance. Heavy trucks (higher axle loads) and lack of routine maintenance, however, have contributed to pavement and structure deterioration. Most countries in the region have done little to maintain road networks, and as a result, road quality has deteriorated. Only recently have authorities in the region considered ways to maintain the road system. Figure 1 compares road maintenance and construction expenditures in Jordan between 1983 and 1990. On average, the expenditure-construction ratio was about 8.6 percent (6). However, from 1988 to 1990, this ratio fell.

Increased road rehabilitation and maintenance efforts are expected to reduce road-user costs and result in greater economic savings (as well as an increase in safety). A technical report by the Economic and Social Commission for Western Asia recommended that funding for road rehabilitation and maintenance be increased to levels ranging from 30 to 40 percent of construction funding. Fur-

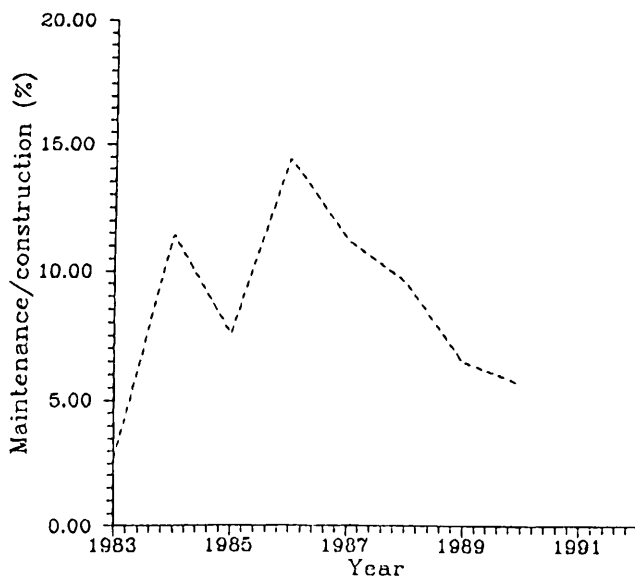


FIGURE 1 Road maintenance expenditures as a percent of construction expenditures in Jordan.

thermore, this funding should be increased annually in a systematic fashion. Current levels of road maintenance expenditure range between 5 and 20 percent (6).

Joint Free Zone Development

The Camp David agreement called on Egypt and Israel to grant normal access to each other's ports for vessels and cargoes. Ideally, free zones should be established between Israel and Jordan, Israel and Syria, and Israel and Lebanon. A joint free zone (JFZ) could be established between Israel and Jordan in the Gulf of Aqaba area between Aqaba and Eilat, where warehouses, shipyards, and port and container facilities already exist. A wide range of economic activities could take place in the JFZ areas.

Regional Environmental Transport Policy

An increase in spending on transportation, while generally favorable, would produce a number of undesirable side effects. Traffic congestion, air and noise pollution, traffic accidents, and shipping accidents (including oil spills) could all increase as the countries of the Middle East upgrade their transportation systems. A comprehensive transportation policy to protect the environment and enhance the quality of life, particularly in urban and suburban areas, is proposed. Governments would have to work together to produce such a policy, and funds would be needed to establish and operate it.

CONCLUSION

Comprehensive peace and genuine arms reductions in the Middle East will generate a great demand for more efficient movement of people and goods. Air, land, sea, and pipe transportation can be used efficiently to satisfy this demand and can be financed by cuts in defense spending.

Because funds may soon be available for transportation investment, there should be a strategy for the development of the transportation sector during the coming decade. The strategy should be formulated with economic and political realities in mind and should be based on regional and international needs.

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