

Haaretz, June 15, 2000.

This is the fourth article in the series *A new set of priorities*, offering a new socio-economic policy, formulated by a team of economists and sociologists, at the request of prime minister Ehud Barak and the director-general of his office, Yossi Kucik. The members of the team are Dan Ben-David, Haim Ben-Shahar, Elhanan Helpman, Manuel Trajtenberg, Efraim Sadka, Daniel Tsiddon, Yossi Shavit and Haya Stier.

Transportation Infrastructure

By Dan Ben-David

Israel would undergo a major revolution if the education offered in every community was on a high level and its citizens had good access to most places of work and professional training. One area of policy that could effect such a change in the country's socio-economic situation is massive investment in the transportation infrastructure.

This infrastructure plays a key role in Israel, not only in terms of economics, but also in terms of social affairs. Despite the country's relatively small size, there are large and widening gaps between communities on the periphery and those close to the big cities – and the more time goes by, the greater the sense of alienation that is felt by large segments of society.

Building a good and efficient transportation infrastructure connecting the periphery to the large urban centers could contribute significantly to a reduction in the sense of alienation and to a closing of the gaps. This is particularly true if the upgrading of the transportation infrastructure would coincide with a substantial improvement in the level of basic education in peripheral communities to the much higher levels that prevail elsewhere in the country – an outcome that would be facilitated if teachers could live in one location and teach in another, readily accessible, location.

Israel's small size makes it easier to build the necessary transportation infrastructure and bear the related costs. Most towns are within a twenty to thirty minute range from the big cities, if they would have a high-speed train connection. These distances are not essentially different from those separating American suburbs and large cities, between which there is a steady flow of workers in both directions every day.

The combination of an improved educational system in the periphery and an improved transportation infrastructure tying the country together will allow for a natural dispersal of people and businesses. For example, an educated family living in a crowded apartment in the center of a large city, will not hesitate to move to the periphery were it to offer a higher standard of living for a lower price, without the drawbacks of an inferior educational system and a long commute to work. This trend will be enhanced as businesses and teachers begin to move to the

periphery for the same reasons. Families and companies' voluntary move from the cities to the periphery will alleviate the sense of alienation felt by residents of those same outlying areas. This process will also be accompanied by reduced demand for real estate in the big cities and increased demand for real estate in the periphery – an outcome which will improve the relative wealth of periphery residents.

Increasing workers' access to training centers and jobs will immeasurably improve the allocation of resources in the Israeli economy. As the allocation of production factors becomes more efficient, income per capita will rise. However, it is not just a matter of raising levels of income, but also one of increasing productivity and as a result, of raising annual growth rates of income – which have a multiplicative boosting effect on incomes in the long run. In other words, serious investment in transportation infrastructure, which represents an integral part of the economy's total capital stock, will yield very high returns. It will not only help reduce income gaps along Israel's growth path, but also actually increase the slope of the long-run growth path itself.

How did the transportation infrastructure in Israel develop over the last decade and a half and how does it fare in an international comparison? The Central Bureau of Statistics (CBS) reports that between 1985-1998 the total number of vehicles in the country increased from 776,000 to 1,675,000. Bank of Israel data show that the density on Israeli roads has doubled since 1985, even though new roads were built and old ones expanded during that time.

The increased traffic congestion is characterized by a number of different facets. First, the human facet: the high congestion on the roads does not facilitate a reduction of the social alienation described above (if anything, it enhances it) and this congestion is also reflected in a very high number of casualties from traffic accidents. In 1997, the average number of traffic accident casualties for every 10,000 residents in western Europe was 42, while in Israel it was 81 – more than in any of the 18 western European countries.

Second, the increasing congestion is reflected in very high monetary costs for the Israeli economy. Alongside the costs ensuing from accidents and the treatment of those injured in them, there are direct costs stemming from the congestion. A simple example will illustrate the scale involved: if, as a result of the overcrowding, the commute to work takes 10-20 minutes longer, what is the overall cost to the economy? Instead of assuming that all of the extra time spent commuting comes at the expense of work, assume that just one minute of this extended commute comes at the expense of work. The cost of this wasted minute (one in each direction: to and from work) cost the economy a total of NIS 1.2 billion in 1999. This amount rises the more minutes spent in commute actually come at the expense of work time. The remainder of the time wasted in the commute as a result of overcrowding comes at the expense of leisure time, which also extracts a very high cost. It should be noted that the high cost per minute described above does not include the heavy damages incurred by commercial traffic stuck on Israeli roads daily for hours on end.

How crowded are Israeli roads compared to those in other countries? World Bank data indicate a relatively small number of vehicles on the roads relative to the population – Israel has just 248 vehicles for every 1,000 people, compared to an average of 483 in the 23 member countries of the Organization of Economic Cooperation and Development (OECD) – approximately half the OECD average. Nevertheless, the density on Israeli roads is very high.

A survey of industrialized countries conducted by the Bank of Israel found that Israeli roads are extremely crowded – about 50 percent more than those in Portugal, which is second on the list, and roughly three times more crowded than the average of the sample countries. The average length of roads per square kilometer in the sample countries – which also have many more railroad tracks – is 70 percent higher than in Israel.

Despite the severe traffic congestion and the paucity of roads and railroads, Israel invested (as a percentage of total income) just 75 percent of the average investment made by the countries surveyed between 1991-1996. And if the facts that the Israeli transportation infrastructure lags considerably behind the rest of the industrialized world and investment in infrastructure is lower weren't enough, the Bank of Israel notes in its most recent report that in 1999, there was a 14 percent drop in road investments and a 38 percent drop in railroad investments.

Indeed, the situation regarding railroads is even grimmer than that of the roads. Between 1987-1995, the industrialized countries' gross investment in railroads as a percentage of income was more than four times Israel's investment in rail. During the entire decade of the nineties, Israel spent a total of just \$3 billion on railroads – a sum equal to the value of three minutes wasted on the road by all workers in one year.

What is the state of Israel doing to reduce the huge gap that has emerged in transportation infrastructure over many years? Compared to Western countries which invest approximately 1.4 percent of their income in roads and railways, Israel last year spent just 0.8 percent of its income – more than a half-percent point difference. In other words, instead of finally starting to reduce the gaps – and build a transportation infrastructure that is comparable to that in other countries – Israel is letting the gaps widen rapidly and the damage to its economy and to its society increases proportionately.

Given the numerous shortcomings of the current situation and in light of the social and economic advantages that could ensue from improvements in the infrastructure, the conclusion to be drawn is obvious: the state of Israel must substantially increase its investment in transportation infrastructure.

The full report (in Hebrew) as presented before the Israeli cabinet can be viewed at <http://econ.tau.ac.il/priorities>