

Reducing Road Congestion by Adopting Congestion Charges

Omer Moav and Shani Schreiber*

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* Prof. Omer Moav is a professor of economics at the Tiomkin School of Economics, Interdisciplinary Center Herzliya and at the University of Warwick, omoav@idc.ac.il. Shani Schreiber is referent at the Government Companies Authority. This paper was written prior to Shani Schreiber's work at the GCA.

Reducing Road Congestion by Adopting Congestion Charges

There is a high level of congestion on the roads in Israel which is the cause of a significant wastage of time and a reduction in productivity. Despite the large-scale (even if insufficient) investment in the transportation infrastructure in Israel, the speed of travel - whether in a private vehicle or in public transportation - has not risen on average over time. In addition, there are those who claim that additional transportation infrastructure without accompanying measures does not reduce congestion in the long run, since new roads quickly fill up with new vehicles as a result of two processes: The first is the growth in population and in the level of motorization; This is particularly true for Israel, which has a high rate of population growth relative to other developed countries, such that a high level of investment is needed just to keep up. The second process is related to the existence of induced demand for use of road space, and indeed there are findings that the demand for road space grows with the supply and therefore adding roads without limiting demand at the same time is ineffective, and even if it was effective - it is not always possible to pave new roads, especially in the cities.¹

In this policy paper, we suggest a solution to the road congestion problem in Israel, which includes two main components. The first involves incentives to reduce the use of private vehicles on crowded roads by replacing components in currently existing taxation of vehicles with a congestion tax. In other words, the purchase tax on a new vehicle and the gasoline tax would be reduced and a new tax would be imposed on the use of private vehicles according to the characteristics of actual use, i.e. payment for traveling on a congested road. The second component, which is a supplemental policy to significantly increase the alternatives available to the public, is the removal (at least in part) of the regulatory barriers regarding public transportation, thus enabling private initiatives to operate bus lines, shared taxis and shared transportation.

The global experience with congestion charges has been highly positive, and even though its implementation is not very popular with the public at first, with time the public attitude becomes more favorable as the resulting increase in welfare becomes evident. Congestion charges are a progressive tax, since the main beneficiaries are users of public transportation who enjoy less congested roads without paying the tax. However, the benefit to users of public transportation does not come at the expense of private vehicle users, since the

¹ We would mention that we support the investment of resources to reduce the lag in infrastructure and public transportation in Israel, but this should be done in parallel to supplementary measures to curb demand, the most effective of which is congestion charges.

average burden on them does not increase but is rather divided more fairly and more efficiently, and they also enjoy less congested roads.

Road congestion is characterized by low speed of travel and greater traveling time. It occurs when the demand for the use of a road exceeds its traffic capacity. The effect of traffic congestion on the time available to an individual is clear and the cost is significantly high and thus a solution is required.

The problem of road congestion is not unique to Israel; a CEBR research (2014) which examined current and predicted costs of traffic congestion in the US, UK, France and Germany between 2013 to 2030 found that:

- The annual combined cost of traffic congestion in these countries in 2013 was \$200.7 billion, and is expected to rise to \$293.1 billion by 2030, an increase of 46 percent.
- During this period, the combined cumulative cost of traffic congestion for these economies is estimated at \$4.4 trillion.
- Individuals waste an average of 36 hours a year in traffic jams in metropolitan areas in the countries studied. This number increases three-fold (to 111 hours) when accounting for the extra time needed to reach a destination on time in a reality of traffic congestion.² The wasted time as a result of congestion is expected to increase by 6 percent annually between 2013 and 2030 in these countries.

The calculation presented in this paper estimates the external costs of transportation due to congestion in Israel at about 4 percent of GDP, and in 2016 prices this translates into a loss of about NIS 49 billion in GDP.

In view of the significant loss to the economy and public welfare, the discussion of solutions to the road congestion problem and the creation of a sustainable transportation system in Israel is of the utmost importance.

Nonetheless, the solution being advanced in Israel constitutes "more of the same", i.e. the development of public transportation and road infrastructure at a rate that is not expected to meet the growth in demand for transportation. Based on past experience in Israel, the rate of development of public transportation is not keeping up to the rate of increase in the demand for transportation and as a result the level of congestion will remain unchanged

² In view of the fact that a person cannot know ahead of time how "bad" the traffic jam waiting for him will be, in order to ensure arriving at a destination on time he is forced to add planned time to his trip.

even according to the most optimistic forecast and will increase according to the most pessimistic.

At the same time, regulation in Israel constitutes a barrier to other solutions that have been tried in other countries, even though they are more efficient and easier to implement and despite the fact that some of them can be implemented without any additional resources from the state budget or alternatively by means of a modest investment. Based on the experience of other countries, we propose other essential solutions that can be carried out in parallel to the development of public transportation and road infrastructure, without whom Israel will reach a situation of unsustainable congestion costs.

The main solution that we propose is congestion charges. In addition, we briefly review two other solution that are currently limited by regulatory barriers and which would be worthwhile implementing in combination with a congestion tax, i.e. private sector initiatives in shared transportation and public transportation. In this way, a larger number of alternatives to the use of a private vehicle would be made available.

Congestion charges have been implemented successfully in a number of countries and have been effective in reducing wastage of time by tens of percent, in addition to their positive effect on public health following the reduction in air pollution. In addition, a congestion tax, which is meant to replace the existing taxation method, makes the taxation of transportation more equitable and more efficient in reducing congestion, and therefore is supported by the public following its implementation. Thus, a congestion tax is a desirable policy from both a public and political standpoint.

In view of its proven effectiveness, we believe that the government of Israel should adopt a congestion tax and it will find that the public will come to support the decision. If congestion charges are adopted in Israel, the immediate benefit will amount to about NIS 16-20 billion per year, and this amount will grow from year to year. Indeed, by 2040 the cumulative savings will reach about NIS 731 billion, approximately equivalent to Israel's GDP in 2007.

The estimators we use assume that the time wasted in traffic will not worsen, and ignore the significant costs of reduction in choices as workers and employers have limited alternatives. We also ignore the loss of productivity as a result of the inability of some workers to reach urban places of work (where the level of productivity is higher) due to congestion. Therefore, in reality the economic benefit of a congestion tax is expected to be even higher.

"[Congestion charges are the] *correct theoretical approach to reducing the use of private vehicles*" (Ministry of Finance and Ministry of Transportation, 2012, p. 59) and since technology has made its efficient implementation possible, it is unclear why its

implementation is being delayed in Israel since it would result in a significant increase in public welfare.

We hope that this paper will influence the public, the media and policy makers in the various government ministries to view congestion charges more positively, so that they will gain more support and an implementation plan will soon be formed.

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Contact details:

The Interdisciplinary Center Herzliya - IDC, P.O. Box 167, Herzliya, ISRAEL 4610101

Phone: 972-9-9602431, Email: aaron.economics@idc.ac.il, Website: aiep.idc.ac.il