

Executive summary

All parties in the Swedish Parliament (Riksdag) have expressed that Sweden's infrastructure is in a state of neglect. Moreover, stakeholder organisations, such as the Swedish Union of Service and Communication Employees (SEKO, 2012) and the Confederation of Swedish Enterprise (2013), are in unusual agreement regarding the huge and urgent backlog of operation and maintenance requirements. Maintenance neglect has also been referred to by the Globalisation Council (2009) and the Royal Swedish Academy of Engineering Sciences (IVA, 2011). There appears to be consensus that Sweden needs to invest more in infrastructure. The question is more about how large the infrastructure deficit is. Various figures abound. Among others, the Centre for Operations and Maintenance at the Royal Institute of Technology (CDU, 2009) estimates the maintenance backlog within the state road and rail sectors at SEK 30 billion for roads and, according to the Confederation of Swedish Enterprise's estimates (2013), the infrastructure deficit is as high as SEK 300 billion.

But what is the basis for these estimates? Are they correct? Do we have such a deficit? The first conclusion to be drawn from the detailed answers given in this ESO-report is that we do not know.

In the report, a number of economists shed light on the question of how much should be spent on infrastructure, focusing on the national road and rail infrastructure. One reason for gathering different perspectives is that, for some time now, varying signals have come from different economists. The debate on infrastructure's contribution to growth raged among Sweden's economists even twenty years ago. At that time, Sweden was in deep economic crisis and, as often in bad times, it was necessary to consider whether government investment projects could be brought forward to stimulate the economy. The crisis had followed

a series of crises in the 1970s and 1980s, and it was obvious to many that, this time, structural growth-enhancing measures were needed. Attention was therefore directed to research findings. Based on data from the United States, Aschauer (1989) showed that the infrastructure investments made there, especially in the 1950s and 1960s in the construction of an interstate highway system linking the entire country, had increased business sector productivity and hence growth. The Swedish Productivity Delegation took note and proposed vigorous investments in infrastructure, this time as a growth-enhancing measure. However, in the research literature and the Swedish economic debate alike – for example, in the journal of the Swedish Economic Association, *Ekonomisk Debatt* – the causality between infrastructure investments and growth was called into question. It was pointed out that the direction of the causality was unclear. Perhaps growth drove infrastructure investment and not vice versa. And the marginal impact of additional infrastructure might not be as great as the impact of the first comprehensive national road networks.

While the recent debate resembles earlier discussions, it has slightly different overtones. The growth-enhancing effects of infrastructure are emphasized also today. However, a new argument is that infrastructure investments have not kept up with the relatively strong economic growth that Sweden has experienced since the mid-1990s, especially given that the population has increased and is concentrated in the metropolitan areas and regional capitals.

Several recent reports on general macroeconomic variables have also discussed the infrastructure neglect. But the macroeconomists have not received any explicit support from the applied economists who work on transport and infrastructure planning problems. So the question is why microeconomists are not as convinced.

Some of the answers to this question are given in the report's two introductory contributions by Anders Vredin and Johan Nyström. Vredin goes through the relevant macro data and draws a cautious conclusion that infrastructure is underfunded. Nyström scrutinises the arguments contained in the macroeconomic reports and criticises the statistics. The authors come to different conclusions, but agree that key aspects of the statistics need to be improved. Other contributions to the anthology highlight the question of how the need for improved infrastructure should be weighed against other societal needs. A first such aspect, addressed

by Urban Karlström, is whether it is obvious that the state should finance infrastructure using tax revenues. Another crucial question raised is to what extent guidance can be given by the cost-benefit analyses (CBA) made for each investment? This is discussed in separate contributions by Runar Brännlund and Lars Hultkrantz. A third issue is how overall policy priorities can be combined with CBAs of different investment options. This is examined by Gro Holst Volden, who presents Norway's new way of tackling the issue. A fourth aspect, discussed by Jan Owen Jansson, is the linkage between urban and transport planning. Yet another aspect, addressed by Jan-Eric Nilsson, deals with the overarching relationship between political decision-making and infrastructure planning. At times, the main problem may be the political system's ability to set priorities rather than the limited resources.

The fundamental question – whether the Riksdag's planned investment of SEK 522 billion, in addition to congestion charges and road tolls, for the period 2014–25 is sufficient or not – may still be considered unanswered with today's statistics.

But even if an answer still is outstanding, the anthology offers a number of constructive contributions to the ongoing discussion. In this context, we would like to highlight three proposals.

Firstly, every investment project should be judged on its own merits. There is no satisfactory data to weigh the needs of infrastructure against other pressing needs. Infrastructure needs cannot be constructed on the basis of macroeconomic statistics; they must be based on analyses of the actual state of the infrastructure and the investment's profitability. The CBAs used to prioritise between investments could also be used to assess the total financing needs for projects of high or moderate profitability. The Swedish Transport Administration could be assigned the annual task of producing data for this purpose.

Secondly, begin the work by using cross-sectoral calculation parameters. The Transport Administration's CBAs are of high quality. However, it is difficult to assess how important it is to allocate additional funding to this policy area in relation to the need for additional funds in other parts of the public sector. There are simply too few CBAs made outside the transport sector and those that are done do not always apply the same calculation principles. In the health care sector, for example, CBAs are used for testing new pharmaceutical products and recommendations of various therapies. However, the results are not fully comparable

with the transport sector, as the estimation methods and calculation values are not coordinated. It is therefore essential that general calculation principles and cross-sectoral calculation parameters are established so that they apply to all government agencies. In Norway, this is the responsibility of the Ministry of Finance; in Sweden the responsibility could be assigned to the Swedish Agency for Public Management or the Swedish National Financial Management Authority.

Thirdly, look at how a comprehensive reform of taxes and charges for all modes of transport could be designed. A fundamental question economists ask when it is claimed that a certain production capacity must be expanded is whether the price of the good or service is set correctly. If the price is too low, especially if it is lower than the marginal cost, it is usually wise to begin considering a price increase. The same general principle applies to the transport sector. In fact, it has long been the overarching principle of transport policy in both Sweden and the EU that transport should be priced according to its total social marginal cost. Considerable evidence suggests that truck and rail transport is currently underpriced. This gives rise to a large part of the capacity gaps we see. Capacity problems could therefore be rectified relatively quickly through increased and differentiated taxes and charges. However, this should not be done without considering the industry exposed to international competition. In addition, the pricing issue cannot be tackled for one transport mode at a time because of transfers between modes; instead, a reform is required that covers all modes of transport. It is therefore proposed that the Government commissions an inquiry to conduct an impartial review of how a comprehensive reform of taxes and charges for all modes of transport could be designed.