Green tax, trucker actions, media coverage, misperception and political reversal

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Abstract

During the winter of 2000, truckers blocked the main roads in and out of the Norwegian capital Oslo. The main cause was low profitability in the business, and the reason for that was claimed to be a steady increase in the environmental tax on diesel oil the preceding five years. As a consequence, politicians removed the tax. When doing so, some politicians neglected the philosophical ground of being for their parties, and a majority of them ignored Kyoto Treaty obligations and stated preferences for green taxes. In this paper, I claim that all this happened because voters, media and policy makers created and firmly believed in an illusion. Rather than discussing causes, focus was on action forms, events, and attitudes. A surprisingly simple simulation model solves the apparent paradox. To justify the claims made, we rely on a thorough survey of newspaper articles.

Figure 1 shows the development in taxes on diesel oil the years prior to the trucker actions.

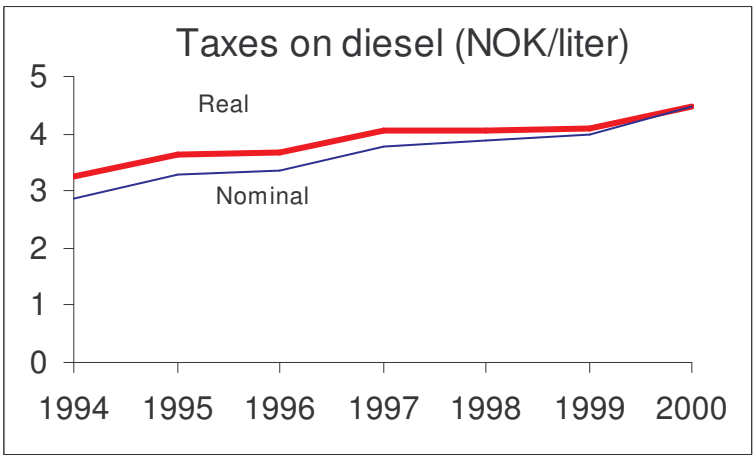

Figure 1: Development of taxes on diesel oil in Norway (Source: Statistics Norway)

Trucker actions took place in January 2000. The box shows selected headlines from the web-edition of the newspaper Aftenposten, which sees itself as the most serious and important forum for newspaper debate in Norway (my translation from Norwegian). As can be seen, there are no headlines asking for a justification for the actions. Focus is on the size of actions, various consequences, willingness to demonstrate, public support, and after some time signals from political parties that want to reduce the tax.

January 20
Blockade to be expanded tomorrow
No increase in public transportion
Policy is ready for new actions
January 21
Shutting off Oslo again
January 23
New day of chaos to be expected
January 24
New blockade created new chaos
Ambulance trapped at Sjølyst
FrP [populist party] and Høyre [right wing party] support lower taxes on diesel
Did not keep promise, blocked the file for public transit
Was stuck, had to walk
January 25
Reacting to the passivity of the police
Will not accept more actions
FrP [populist party] wants a separate Department of Transportation
Labour party will ask Restad [Minister of finance] about new tax
Announces new actions tomorrow
Massive support for reduced taxes on diesel oil
Great will to action among truck owners

What was so obvious that nobody questioned the justification? The red part of the causal loop diagram in Figure 2 shows the obvious structure. Taxes lead to higher costs which lead to reduced per unit profits. This is easily understood by everybody. A generally weak tendency to seek alternative explanations is probably reduced further by the simplicity and power of the explanation and the evoked emotions when confronted with a tax issue.

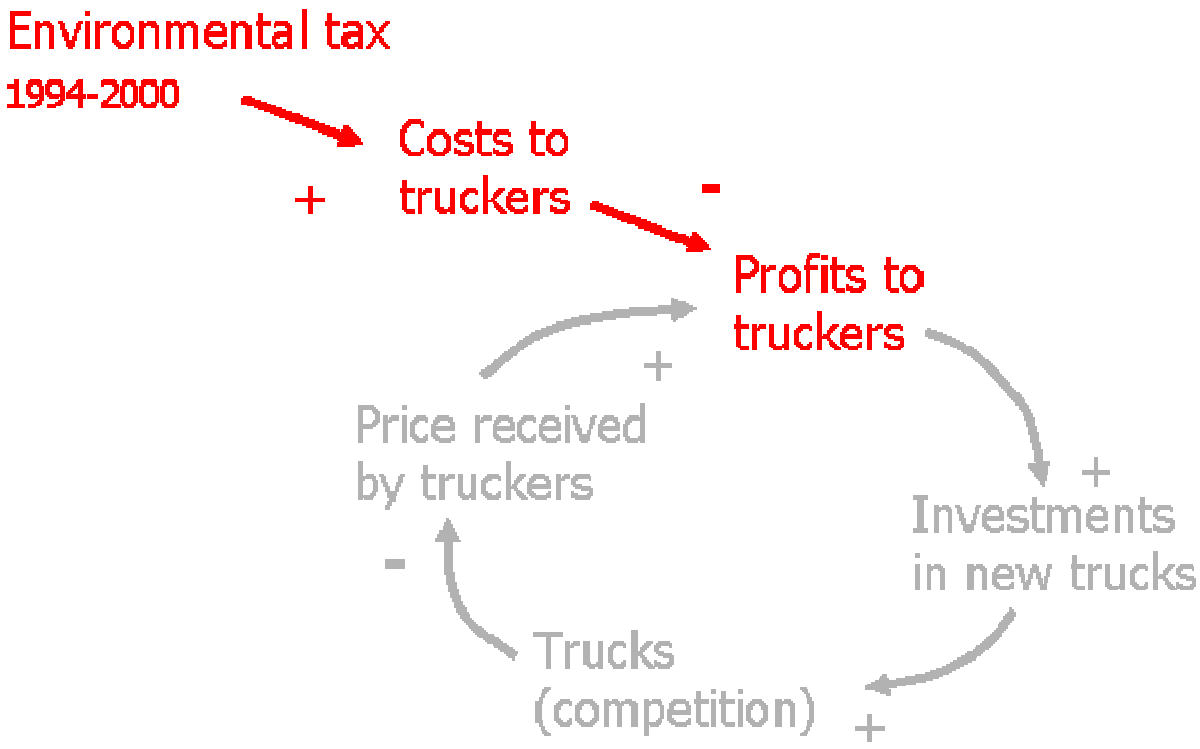

Figure 2: Causal loop diagram

What did the media and the politicians ignore? The causal loop diagram also shows a feedback loop by which lower profits lead to higher trucker incomes. Thus, there is a balancing effect on profits. First, low profits lead to reduced investments. Then over time, the stock of trucks will grow more slowly than it would do otherwise. Fewer trucks imply less competition, which lead to higher prices and higher incomes for the truckers.

Is this balancing loop debateable and of little importance for the effect of diesel taxes? When media and politician did not mention this effect, one could think so. The answer is clearly no. The balancing loop represents the fundamental working of the market system and represents the philosophical ground of being for all market oriented political parties. Adam Smith called this mechanism “the invisible hand”. The media coverage suggests that it is not only impossible to accurately observe the private decisions of multiple actors; even the theory seems invisible in this context.

To explore the effects of the “invisible hand” after the tax increase we use a simple simulation model. Since our main concern here is to demonstrate the implications of the

"invisible hand", the model is not calibrated and tuned to replicate every detail of history. Without the tax increase starting in 1994, the model stays in equilibrium, exemplified by the line for normal profits in Figure 3. The model with its stocks and flows, nonlinearities, and parameters is inspired by previous System Dynamics models. When exited by a demand shock, the model produces damped cycles, and when exited by random variation in demand it produces sustained cycles. A few parameters have been tuned to make these cycles have the same length as the cycles that can be observed in historical time-series for the Norwegian trucking market.

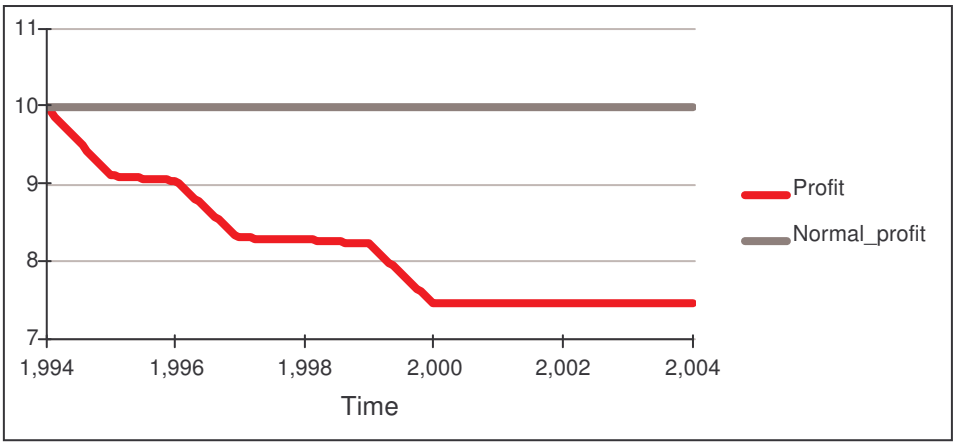

Figure 3: Development in profits without the "invisible hand"

Figure 3 shows what happens to profits when the "invisible hand" is decoupled. For each increase in the tax, profits (return on capital) decrease. Behaviour is according to the simple red part of the causal loop diagram. Perhaps surprising though, the effect is not very big. Profits decline from the assumed normal profit of 10 percent to 7.5 percent by the time of the demonstrations. Even this quantification of the simple model itself escaped the media coverage. While not large, the effect would probably have been sufficient to cause problems for the weaker firms. However, the effect is an illusion, which led politicians to remove the environmental tax in the aftermath of the demonstrations.

Then we include the "invisible hand". Figure 4 shows that profits start to decline as in Figure 3. However, as profits start to decline, investments and number of trucks will drop and the price of trucking services increase. By the time of the blockages, the profits have already been re-established at or above the normal level for a couple of years. Contrary to what everybody assumed, the cause of low prices could not have been the increased taxes on diesel oil.

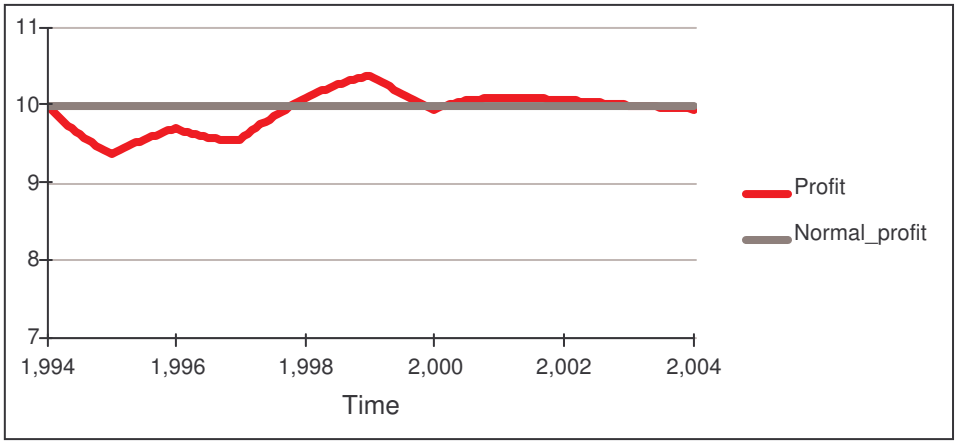

Figure 4: Development in profits with the "invisible hand"

But, the low profits must have had a cause, what could this cause be? Our simple model can also be used to explore the most likely reason, demand variation. Data shows that demand for trucking services increased by 50 percent from 1994 to 1998. Again the "invisible hand" is at work. Higher demand pushes up prices, which lead to higher profits and investments. As demand growth stagnated in 1998, many new trucks were still entering the market. Data shows that new registrations of trucks in 1998 were 186 percent above the average for the period 1990 to 1993, before demand started increasing rapidly. Thus, overexpansion of capacity and demand stagnation lead to tough competition, reduced prices and profits by the time of the blockage.

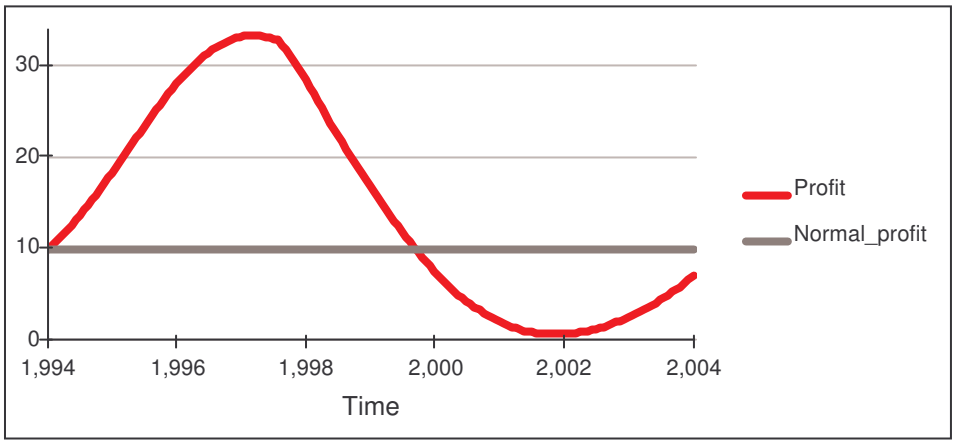

Figure 5: Development in profits with the historical demand shock

Figure 5 shows profits below the normal level and rapidly decreasing in 2000. Initialising the model more correctly in a commodity cycle upturn leads to an earlier drop in profits, and to even lower per unit profits in 2000. Low capacity utilisation adds to the problem; in the simulation model utilisation is 20 percent below normal in 2000.

Finally, the fact that truckers demonstrated at approximately the same time in other countries, favours an upturn in international trade as the common explanation rather than Norwegian diesel taxes.

CONCLUSIONS

In the light of pressing environmental problems and an expressed interest in a green tax system by Norwegian politicians, it is appalling that such an environmental tax could be removed because of an illusion. From Figures 4 and 5, one can see that the timing of the tax was ideal; its negative short term effects were counteracted by the positive effects of a demand increase as well as a likely commodity cycle upturn. For the future it is most important to fight the illusion; to teach media and politicians that the "invisible hand" works not only to ensure market efficiency, but also to remove the negative effects of environmental taxes. The current interest in market oriented policies implies that there is a certain potential for guided knowledge transfer.

One transportation economist commented to a newspaper that the diesel tax had no effect on trucker profits. This is correct in the long run (equilibrium), however to those who only see the red part of the causal loop diagram, his comment makes no sense. It seems vital when discussing the effects of environmental taxes on profits to acknowledge the red part as well as the grey "invisible hand".

Finally, only implicitly the newspaper articles could be used to reveal wrong mental models among politicians and commentators. The main problem is that they did not even ask questions about the causes of the trucker problems. Clearly they were overconfident in their own beliefs. Breaking this overconfidence is an interesting challenge; at least journalists claim they believe in critical journalism.