Tax Avoidance on a Social Network

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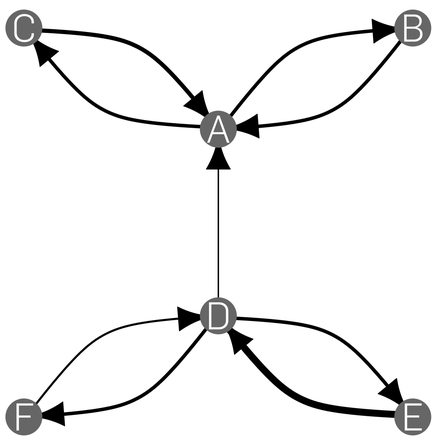
1. Introduction

In this project we provide a network model of the tax avoidance decision in which taxpayers compare their consumption with others in their social network and also with their own consumption in the recent past. In this context, taxpayers may seek to avoid tax so as to improve their relative standing leading to a reinforcing dynamic whereby avoidance by one taxpayer increases other taxpayers' decision to avoid also.
Here we focus on three questions of interest to academics and practitioners in tax authorities:

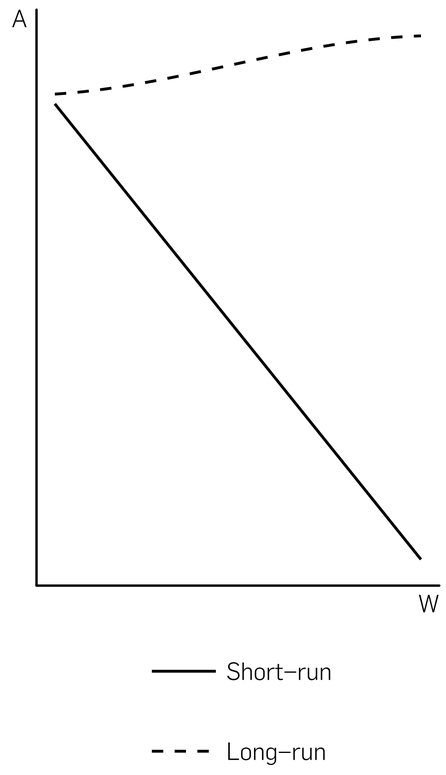
- How do changes in taxpayer characteristics, the tax scheme and deterrence policies affect avoidance?
- How do the marginal revenue effects that arise from performing one extra intervention vary across taxpayers with different levels of "centrality" in the social network?
- What is the dynamic path of avoidance behaviour following an intervention?

2. Network Model

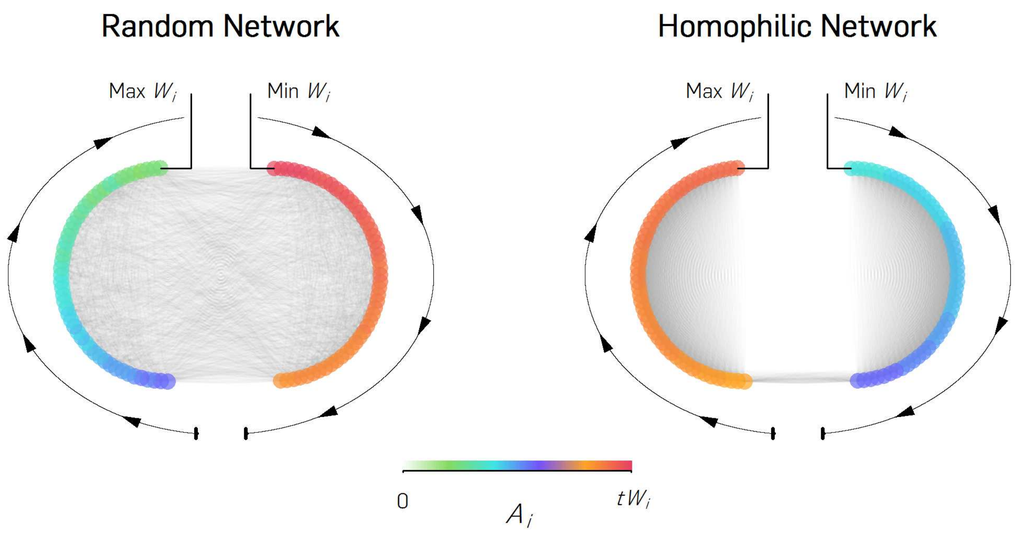
The reference group is typically composed of a person's neighbours, colleagues, and friends. Accordingly, in our model, every taxpayer a unique reference group, and can vary the intensity with which they compare to different people.



3. Income and Homophily

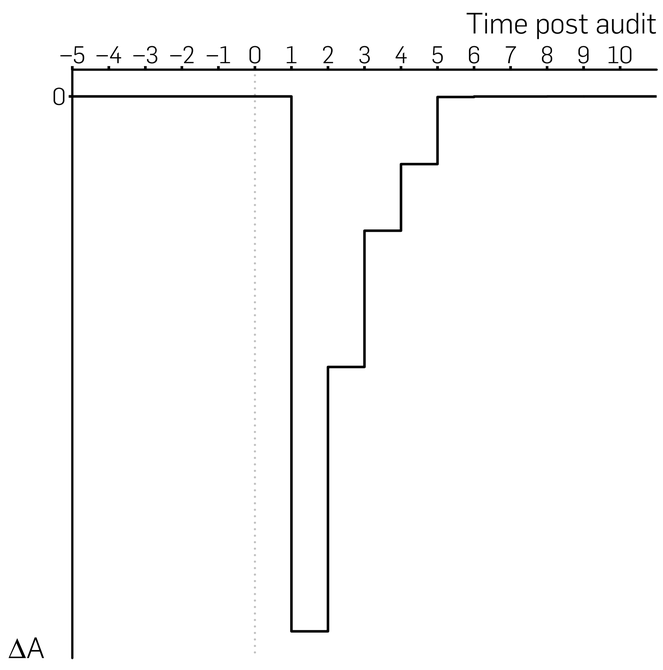


In the figures we see that a negative relationship between income and avoidance in the short-run may be overturned in the long-run. Indeed, in the short-run avoidance has a negative and linear relationship with income. However, when increases in income induce taxpayers to compare to richer peers (homophily) and thereby acquire a higher level of habit consumption, we observe a positive long-run relationship between avoidance and income. Our findings point to an important role for self and social comparison in mediating the relationship between income and avoidance.



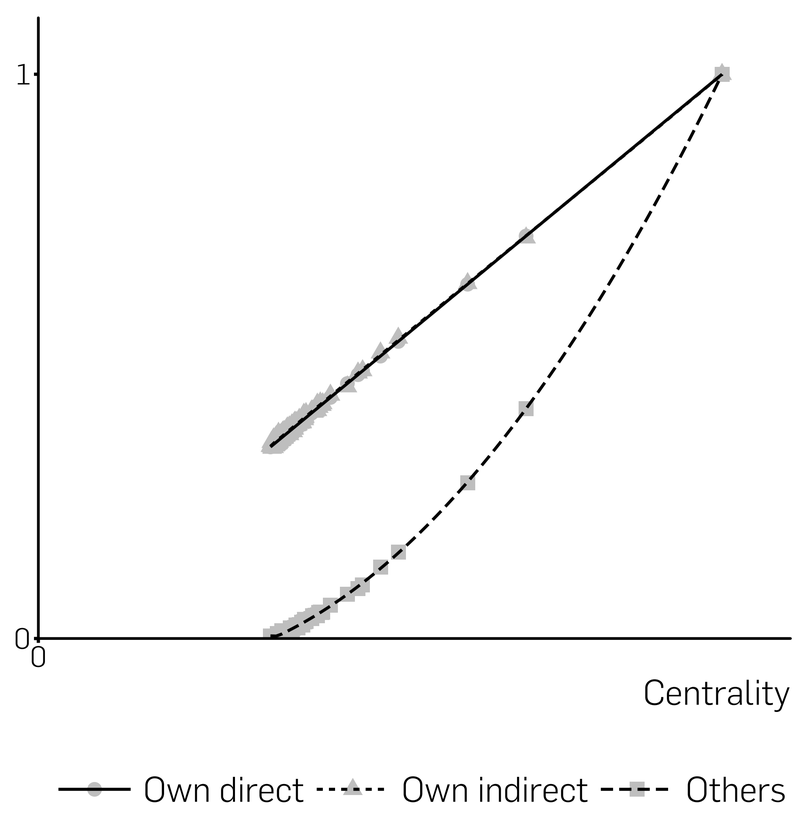
4. Response to Interventions

The figure reports the temporal profile of the change in avoidance following an intervention relative to a baseline where no intervention is performed. Avoidance falls sharply in the year immediately after an intervention, as would be expected, and returns approximately to the baseline level in the fifth year post intervention (i.e., there is no permanent effect). The indirect effect on the avoidance of other taxpayers has a very similar dynamic profile. Our model highlights the role of self comparison as an additional explanatory factor in accounting for post-intervention compliance behaviour.



5. The Revenue Effects of Interventions

The revenue effects of an intervention can be broken down into:
the own direct effect - revenues directly recovered during the intervention
the own indirect effect - revenues arising from changes in future avoidance by the affected taxpayer
the others indirect effect - revenues arising from changes in avoidance by the unaffected taxpayers
The figure shows how the magnitude of each effect varies across taxpayers based on centrality. The own direct effect is related one-for-one with centrality. The own indirect one is negligibly non-linear and lies on top of the own indirect effect. In contrast, the indirect effect on the avoidance of others is highly non-linear in centrality.



6. Conclusions

Our model provides a rich framework for understanding how a variety of variables, some under the control of the tax authority, will influence avoidance behaviour. Unlike earlier models that allow only for social comparisons at the aggregate level, in the present setting each taxpayer performs a local comparison on their part of the social network. Moreover, taxpayers evaluate their utility based on a "habit" level that depends on their consumption in recent past.
While being able to characterize some behaviours observed in reality, the model also provides useful normative insights:

- The evolution of the taxpayer's reference group and habit consumption may heavily affect avoidance behaviour
- Tax authority interventions have a persistent effect on avoidance, with a return to baseline occurring in around five years
- There are objective grounds for tax authorities to target taxpayers who are central in the network