TARC
Tax Administration Research Centre

PROJECT BRIEFING

Tax Avoidance on a Social Network

Overview

This project provided a network model of the tax avoidance decision in which taxpayers compare their own consumption with others in their social network, and 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.

Focus is 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 marginal revenue effects, arising from performing one extra intervention, vary across taxpayers with different levels of "centrality" in the social network?*

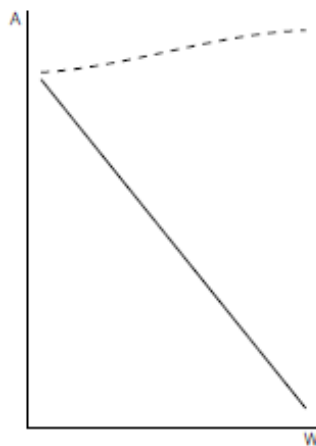- *What is the dynamic path of avoidance behaviour following an intervention?*

Network Model

A reference group is typically composed of neighbours, colleagues and friends.

In this model, every taxpayer is a unique reference group, and can vary the intensity with which they compare to different people.
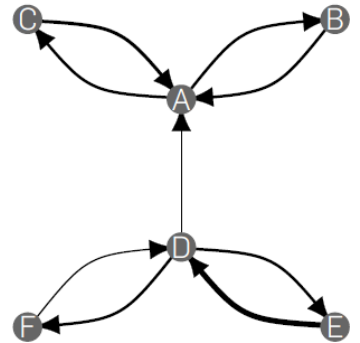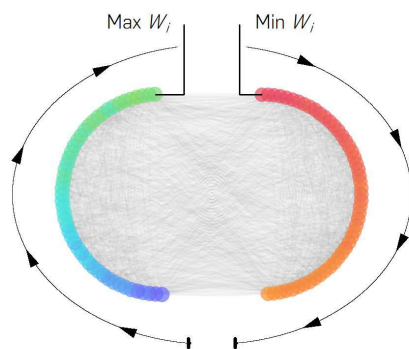

Income and Homophily

The figures indicate that a negative relationship between income and avoidance in the short-term may be overturned in the long-term. In the short-term avoidance has a negative and linear relationship with income.
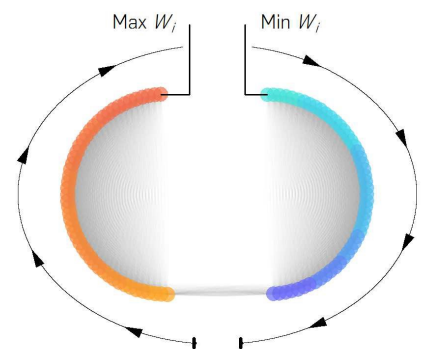
However, when an increase in income induces taxpayers to compare with richer peers (homophily) and thereby acquire a higher level of habit consumption, a positive long-term relationship was observed between avoidance and income.

The findings point to an important role for self and social comparison in mediating the relationship between income and avoidance.

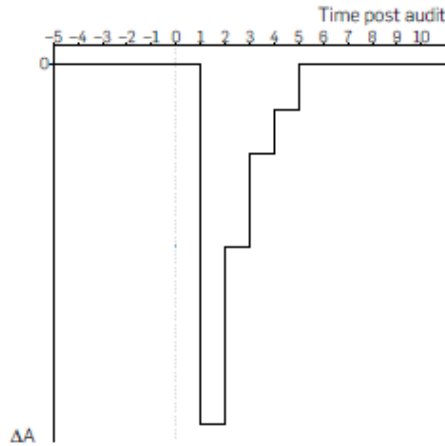Random Network

Homophilic Network

1

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, indicating there is no permanent effect.

The indirect effect on the avoidance of other taxpayers has a very similar dynamic profile. The model highlights the role of self comparison as an additional explanatory factor in accounting for post-intervention compliance behaviour.

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.
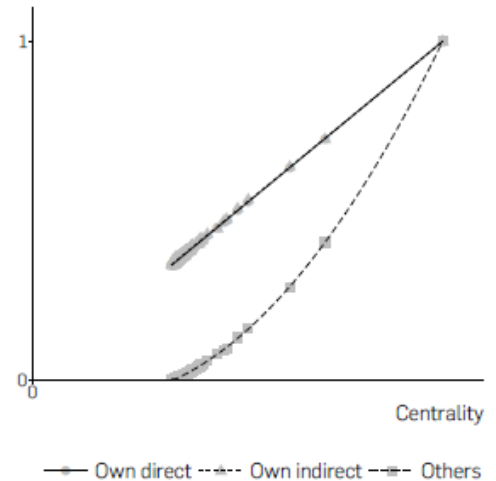
Conclusions

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.

Findings

The model provides a rich framework for understanding how a range of variables, some under the control of the tax authority, will influence avoidance behaviour.

Unlike earlier models that allowed 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.