Yuan Wang

Macroeconomics: tax competition, tax policy, and innovation

My research concerns how governments make economic decisions and interact with other governments, to increase social welfare; in particular, my focus lies in the area of taxation and technological innovation.

In a globalized economy with mobile capital, increasing interest has been paid to capital tax policy. My research is among the first to examine empirically and explain theoretically the tax competition among states in the U.S. Moreover, I also study how state governments set their tax rates using historical data and explain why the pattern observed is different from the zero-tax theory. I then apply a theoretical model to study how governments should set their optimal IPR policy to benefit most from innovation and FDI. Policy implications are suggested in all of these studies.

Capital income is taxed at both state-level and fed-level in the U.S., and state governments maintain the autonomy of taxation policy. Due to the absence of state-level average capital tax rate data, I construct a panel dataset of average capital income tax rates at the state level for the period 1958-2007 for the capital taxation studies.

My job market paper, titled “Tax Competition with Population Growth”, analyzes the pattern of strategic interaction on capital tax rates among states in the U.S. This paper is the first to apply MLE estimation of the SAR panel data model with fixed-effects to study tax competition behavior. Through a joint investigation into both tax competition behavior and the capital allocation decision, I demonstrate the existence of capital tax competition among states in the South and West, but competition is not significant in the Midwest and Northeast. I continue to apply a high-order SAR panel data estimation with fixed-effects to study the impact of population growth on tax competition, and the estimation results suggest that faster population growth significantly relates to stronger reaction to changes in neighbors' tax policy. I also apply two weighting schemes of neighbors to validate the findings. A two-period structural model with a saving decision is developed to explain this result. The model features a capital dilution effect which is also tested empirically in my paper.

My second paper, “History-Dependent Capital Taxation”, analyzes the tax policy of each individual state government. Empirical evidence implies that tax rates are history-dependent. This paper provides an alternative explanation for a nonzero tax rate on capital, reexamining Ramsey's (1927) rule. Due to a lack of commitment power from government, households form adaptive expectations on the capital tax rate. The equilibrium capital tax rate is thus history-dependent with a balanced-budget requirement on state governments. The investment decision combines income and substitution effects, and the U.S. states differ on investment sensitivity to capital tax rates. This paper then provides empirical findings on investment sensitivity for each state, and then a structural model is applied to replicate the empirical findings of both the level and pattern of historical capital tax rates at the state level. The simulated results qualitatively match the empirical evidence observed across 50 states.

My third paper, “Foreign Direct Investment Cycles and Intellectual Property Rights in Developing Countries”, coauthored with Huanxing Yang, develops a quality ladder model in which the technology gap between the North and the South is endogenously determined. Foreign direct investments (FDI) occur cyclically: New FDI arrives if and only if the technology gap reaches some threshold. Stronger intellectual property rights (IPR) in the South discourage imitation and reduce the FDI cycle length. A smaller market size and more imitating firms in the South tend to enlarge the FDI cycle length. The social welfare of the South is decreasing in the FDI cycle length, but is decreasing in IPR strength given cycle length. The optimal IPR strength balances these two effects, and it is non-monotonic in market size and increasing in the number of imitating firms.