2015 IRS-TPC Research Conference

Abstracts of Papers

Session 1: Innovative Methods for Improving Resource Allocation

Estimating Marginal Revenue/Cost Curves for Correspondence Audits

*Ron Hodge, **Alan Plumley**, Kyle Richison, and Getaneh Yismaw (IRS, RAS), and Nicole Khoury, Matt Olson, and H. Sanith Wijesinghe (MITRE Corporation)*

Tax agencies have long desired to allocate their resources so as to maximize the revenue they collect net of administrative costs. It has been clear that net revenue is maximized when the marginal revenue/cost ratio is equalized across all potential activities; otherwise, net revenue could be increased by shifting resources from activities having low marginal revenue/cost to those that exhibit higher marginal revenue/cost. However, marginal revenue and marginal cost are usually not observed; they must be estimated, and that is often a challenge. As a result, many tax administrators rely on readily observable average revenue/cost metrics, which lead to sub-optimal outcomes.

This paper provides empirical estimates of marginal revenue/cost functions for several important categories of correspondence audits of tax returns conducted by the Internal Revenue Service (IRS) for Tax Years 2006-2010, and explains the methodology we developed for making those estimates. We then use these curves to identify the allocation of resources among these audit categories for each of these historical years that would have maximized net direct revenue—suggesting that the same resources could have yielded an additional $190 million of direct enforcement revenue if they had been allocated differently during these years.

Examining the TDA Collectability Curve: How Does the Aging of TDA Delinquencies Impact Dollars Collected?

*Joe Saldana, **Jeff Wilson**, and Tom Beers (IRS, Taxpayer Advocate Service)*

To analyze how collections may change as delinquent accounts (TDAs) age, the Taxpayer Advocate Service explored the rate of collection by the number of years elapsed since TDA issuance. While the study consisted of several specific objectives, the primary focus of the study was to determine if the IRS collects fewer dollars as TDAs age. Additional items studied included how collections vary depending on the type of delinquency and the balance owed, the accumulation of penalties and interest, and whether the type of assessment affects the likelihood of IRS abatements.

The study showed that collections decline as TDAs age as a percent of the: 1) initial TDA balance owed, 2) TDA balance available for collection (when considering previously collected and abated amounts), and 3) total dollars collected. Specifically, our analysis showed that dollars collected typically decreased by over 50 percent from the first year to the second year and, in the third year, collections decreased by about 30 percent from the amount collected in the second year. Dollars offset from refunds to satisfy all or part of a TDA liability also declined, but not as precipitously. The IRS is more successful at collecting self-reported liabilities TDA liabilities and TDA liabilities of $5,000 or less. When considering IRS imposed assessments, the IRS is less likely to collect these liabilities and more likely to determine the assessment is not actually due. In fact, the IRS abates nearly a third of TDA balances assigned to the field for collection.

Analysis of Flow-Through Entities Using Social Network Analysis Techniques

*Rahul Tikekar, Ririko Horvath, and Larry May (IRS, RAS), **Ashish Agarwal** and Shannon Chen (University of Texas at Austin)*

The Internal Revenue Code allows flow-through tax treatment for legal entities so that only owners or investors are taxed. The information return that flow-through entities file includes a schedule K that shows income and expenses that are being allocated to the owner(s). While this avoids double-taxation, it introduces complexity in auditing the tax returns as flow-throughs have to be linked to the tax returns of the owners. Further, a flow-through entity can be associated with several other flow-through entities, and the financial flows can vary across owners both in the type and the dollar value of the flow. Due to this complexity, there is need to represent the associations between different types of entities and the related financial flows in a form that is quantifiable and can be used to evaluate these associations for tax compliance risk. This is especially important considering that more than 20 million k-1s are issued every year.

In its simplest form, a tax structure resulting from the flow-through treatment is a network where entities can be represented as nodes and the linkages between entities can be represented as edges. Further, the financial flow associated with the linkages can represent a weight of the link. Thus, social network analysis (SNA) can be used to represent the economic structures resulting from the flow-through tax treatment. SNA has been successfully used to represent the complex associations and flows across heterogeneous entities such as individuals, products and firms. In this paper we investigate how SNA can be applied to characterize the complex associations between different entities based on the flow-through tax treatment.

We consider two different samples of k1 data. We also consider other types of linkages such as primary secondary associations and parent subsidiary linkages associated with these k-1s through enterprises. We define measures at the enterprise level and the at the node level. We construct graphs representing enterprises using different samples and calculate the graph measures. We investigate potential application of these graphs to identify the economically important nodes and identify unusual enterprises.

Our investigation shows that SNA can be used to represent the tax structures associated with the flow-through entities. This includes the ability to capture different types of nodes, different types of linkages across these nodes and the ability to represent various types of financial flows associated with the entities. We also illustrate how network measures can be used to characterize different enterprises and compare these enterprises. More specifically, we show how measures can be used to determine if enterprises confirm to the expected network structure and to flag any exceptions. Finally, we demonstrate how combination of network and node level measures can be used to identify economically important nodes in an enterprise.

Session 2: Taxpayer Responses to Rules and Enforcement

Taxpayer Behavior under Audit Certainty

*Benjamin Ayers and **Erin Towery** (Univ. of GA), and Jeri Seidman (Univ. of TX at Austin)*

This study uses a confidential dataset of firms facing certain audit, firms in the Internal Revenue Service (IRS) Coordinated Industry Case (CIC) program, to examine the effect of audit certainty on taxpayer behavior. We first model the determinants of assignment to the IRS CIC program. Though some proxies for the ability or incentive to avoid taxes are related to CIC assignment, results suggest that the IRS targets firms primarily based on size and complexity. We then test whether audit certainty has a significant effect on taxpayers' initial filing liability (i.e., a deterrence effect) and tax reserves (i.e., expected future tax payments associated with positions claimed in the current year). Results suggest that audit certainty does not significantly affect taxpayers' initial filing liability, but does increase the amount of tax reserves recorded for financial reporting purposes. Hence, although audit certainty alters managers' expectations regarding future tax payments, our results suggest that it does not have a significant deterrence effect (i.e., no significant effect on tax planning). Our paper provides new empirical evidence on the strategic tax compliance model and has important implications for tax authorities as they consider the costs and benefits of expensive certain audit programs.

2011-2012 Schedule M-3 Profiles of Schedule UTP Filers by IRC Section Cited

Charles Boynton, Ellen Legel, and ***Lisa Rupert*** *(IRS, LB&I), and Portia DeFilippes (Treasury Office of Tax Analysis)*

The study compares 2011-2012 Schedule M-3 and Form 1120 tax return data profiles for Schedule UTP (Uncertain Tax Position Statement) filers and nonfilers. For Schedule UTP filers with SEC 10K/Public financial statements and $100 million or more in assets, the study further compares Schedule M-3 profiles of corporations that cite or do not cite on Schedule UTP any of the five most commonly cited IRC sections: 482 (transfer pricing), 41 (research credit), 162 (trade or business expense), 199 (domestic production activities deduction), and 263 (capitalized cost). In 2012, 67 percent of such filers cited at least one of the 5 IRC sections.

The study finds that the Schedule UTP filers and nonfilers and that Schedule UTP filers that cite frequently cited IRC sections have different Schedule M-3, Part I, Part II, and Part III, data profiles.

On Schedule M-3, Part I, two lines are particularly important in separating or distinguishing Schedule UTP filers and nonfilers and filers that cite or do not cite one of the five most common IRC sections. On Schedule M-3, Parts II and III, 14 out of 68 lines are particularly important in separating or distinguishing Schedule UTP filers and nonfilers and filers that cite or do not cite one of the five most common IRC sections.

The authors conclude that Schedule UTP filers and nonfilers and Schedule UTP filers that cite frequently cited IRC sections have Schedule M-3 data profiles that are sufficiently different that Schedule M-3 quantitative models could be developed to detect on Schedule UTP nonfiler returns the underlying issues related to the IRC sections cited by Schedule UTP filers. The authors believe such models would assist LB&I return selection.

Individual Nonfilers and IRS Generated Tax Assessments: Revenue and Compliance Impacts of IRS Substitute Assessment When Taxpayers Don't File

Saurabh Datta*, Stacy Orlett, and Alex Turk (IRS, SB/SE)*

The U.S. Income tax system relies on taxpayers voluntarily filing, reporting and paying their tax liabilities. Each year, a fraction of the taxpayers fail to file returns. After the filing season, the IRS identifies potential nonfilers and attempts to secure returns via a series of notices and other contacts. When the taxpayers fails to respond with a return, the IRS can file a "substitute for return" that creates a tax assessment based on prior year information and information obtained from various sources. Many of the substitute assessments are done via the IRS's Automated Substitute for Return (ASFR) program.

To make the best use of resources available to IRS, it is critical that the IRS and policy makers understand the impacts of the ASFR program on collecting delinquent taxes and fostering future filing and payment compliance. To explore these impacts, we develop models of the potential collection of ASFR assessments and then predict the impact of the ASFR program on subsequent filing compliance. We can then use these models to estimate, in terms of dollars collected and the numbers of delinquent returns, the opportunity costs of reductions to the number of cases worked in the ASFR program.

Session 3: Improving Tax Administration by Understanding Taxpayer Behavior

Behavioural Insights to Improve Tax Compliance: Short-Term Impacts from a Randomised Experiment in Guatemala

*Stewart Kettle (University of Bristol), **Marco Hernandez** (World Bank), Simon Ruda (Behavioural Insights Team), and Michael Sanders (Harvard University and University of Bristol)*

This paper presents results from a large (n=43,387) nationwide randomised controlled trial in Guatemala that used reminders to promote tax compliance. The trial varied the letter received by taxpayers (individuals and firms) who had failed to pay their income tax for the 2013 tax year. Taxpayers were randomly allocated to receive either no letter, the letter originally used by the Guatemalan Tax Authority, or four letter variants adapted using behavioural design. We find that whilst all letters increase the rate of declaration, only two of the letters were successful at increasing the rate of declaration, the rate of payment, and the average amount paid per letter received. The best performing treatments were; a deterrent message framing non-declaration as an intentional and deliberate choice, rather than oversight (designed to overcome status quo bias); and a social norms message which referred to the 64.5 percent of taxpayers that had already paid this tax (join the status quo). These two interventions increased the rate of payment as well as the average amount paid conditional on paying, overall more than tripling tax receipts. We estimate that if sent to all taxpayers in the sample, in 11 weeks the social norms letter would have generated additional tax revenues of approximately US$760,000; thirty six times the cost of sending the letters. The effects are persistent and remain at 12 month follow up suggesting the letters are effective at increasing revenue for the tax authority rather than just bringing tax receipts forward.

2014 Taxpayer Choice Model (TCM): Designing Digital Communication Products to Reduce Phone and Mail Inventory

*Courtney Rasey and **Mackenzie Wiley** (IRS, W&I)*

The purpose of this study is to understand how the Internal Revenue Service (IRS) can best migrate taxpayers to less expensive service channels by designing digital communication products taxpayers would prefer over traditional channels. To accomplish this overarching objective, findings were used to prioritize potential digital communication products being considered by Online Services (OLS) and determine any demographic differences in taxpayer preference.

Data for this study was collected using a choice-based conjoint survey. During a conjoint survey, respondents are not directly asked about the importance of service channel features or their preference. Instead, respondents are asked to choose a service channel based on the service channel features provided for any given task or service need. Respondents were shown service channel options for completing a specific task and asked to choose the one they most preferred.

The model includes six service needs (or tasks) with corresponding service channels based on current availability and potential for future development. Results indicate that creating alternative methods for getting the status of a case has the most potential for migration. The model also shows that providing secure message as an option creates the highest preference shift for all applicable tasks as a potential service channel addition.

Attribute importance and demographic analysis findings point to methods for designing and marketing digital communication products in a way to attract the most taxpayer preference. Providing an automatically generated confirmation of receipt has the potential to reduce calls from taxpayers inquiring about the status of their case and provides a higher level of resolution for taxpayers. For taxpayers more likely to use digital communication products, tax return preparation software companies and notice inserts are potential avenues for creating awareness.

Examining and Addressing Taxpayer Expectations for Affordable Care Act (ACA) Automated Information

__Ariel Wooten__ and Marisa McDaniels (IRS, W&I)

Administration of the Affordable Care Act (ACA) has provided the IRS with unique challenges and opportunities for success. In order to assist taxpayers with voluntary compliance and address preliminary taxpayer questions, the IRS developed an automated phone line to answer common ACA-related questions.

The primary objective of this research study was to explore and capture individual and small business taxpayer experiences with and expectations for ACA information that is provided via the IRS automated phone line. One hundred and nineteen individual and small business taxpayers participated in 12 testing sessions at IRS facilities in Washington, D.C.; Austin, Texas; Denver, CO; and Atlanta, GA. Participants experienced the toll-free line first hand by working through testing scenarios, answering questions gauging their comprehension of the information presented on the line, rating their overall experience, and participating in a focus group discussion regarding their expectations and suggestions for improvement.

Faced with budgetary constraints and high call demand, the IRS has increasingly had to rely on automated options to handle taxpayer needs including pre-recorded telephone scripts related to general tax information, changes in tax laws, etc. This research provided the IRS with insight into taxpayer preferences, needs, and expectations when seeking information. While these results are applicable to the ACA automated line, this research can be used to inform future changes to the overall design of the IRS' toll free telephone environment and associated communication models.

Session 4: Helping Taxpayers Get it Right

The Nontaxable Combat Pay Election and the Earned Income Tax Credit

Suzanne Gleason and __Patricia Tong__ (Treasury Office of Tax Analysis)

This study examines the use of the nontaxable combat pay election (NCPE) in the calculation of the Earned Income Tax Credit (EITC) for military personnel with nontaxable combat pay using a new data set containing individual level military characteristics and tax return data. We find that exercising the NCPE benefits most personnel, particularly those that use a paid tax preparer. However, personnel who would benefit from this provision and do not use a paid tax preparer are not only the least likely to apply this option correctly, but also have the lowest average income. We also determine that the exclusion of combat pay more than doubles the EITC-eligibility of the personnel who serve in combat zones. The costs associated with increased eligibility account for 3.8 to 4.5 percent of the annual cost of the combat zone tax exclusion between 2005 and 2009.

Pilot Project to Assess Validation of EITC Eligibility with State Data

Michael Pergamit, __Elaine Maag__, Devlin Hanson, Caroline Ratcliffe, Sara Edelstein, and Sarah Minton (The Urban Institute)

The Office of Management and Budget (OMB) has identified the Earned Income Tax Credit as having the highest improper payment rate and second highest improper payment amount among 13 "high error" programs. A recent IRS compliance study found the largest source of EITC overclaims was linked to determining whether a child met the EITC's rules to be a "qualifying child". Roughly 75 percent of all tax returns with qualifying child errors contained children who failed the residency test - the requirement that a child must live with the taxpayer in the United States for at least six months of the year (Internal Revenue Service 2014). Unlike wage information (also important in calculating the EITC), the IRS does not receive information from third parties that can be used to substantiate where and with whom children live throughout the year, making this aspect of credit administration particularly difficult. We explored the possibility of using data from the Supplemental Nutrition Assistance

Program (SNAP, formerly food stamps) in Florida as a reliable third party source of data to help the IRS verify where and with whom a child lives.

Many people in Florida who receive the EITC also receive SNAP benefits. Program applicants must provide information about where and with whom they live, in order to determine eligibility for SNAP benefits. We found these data do not provide enough information for the IRS to use during pre-refund audit activities. These data may be useful in selecting post-refund audit cases, providing information on workers claiming the "childless" EITC who may be ineligible due to the presence of a qualifying child, and identifying eligible nonclaimants of the EITC.

IRS Preparer-Level Treatment Tests

Karen Masken *(IRS Return Preparer Office)*

In 2010, the Internal Revenue Service (IRS) adopted regulations aimed at establishing standards for paid tax return preparers who prepare individual income tax returns (Form 1040). The objective was to improve voluntary compliance through increased oversight of the paid preparer industry with the goal of reducing errors on tax returns.

One effort to meet these strategic goals was a new requirement that began January 1, 2011, for all paid preparers who prepare Form 1040 returns to register with the IRS, obtain a preparer tax identification number (PTIN), and enter it exclusively as the preparer identifying number on the returns they completed. Previously, PTINs had been optional.

Another effort involved a multi-year study that started in 2012 to determine the effect on tax return preparation accuracy of various treatments applied to paid tax return preparers. Because IRS has historically focused on taxpayer-level treatments, there is currently only a limited understanding of how preparer-level treatments effect change in preparer and client tax compliance. The goal of the multi-year study is to understand what treatments are effective on different segments of the noncompliant preparer population in an effort to determine the cost-effectiveness of the treatments.