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COMPLEXITY AND SYSTEMIC TAX REFORM

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As you all probably know, the Presidency of NTA rotates among its three constituencies – academic, government, and the private sector. When asked to stand for election to be President by Tom Neubig, former president and, at the time, Chair of the Nominating Committee, my first response was, "What constituency was I representing?" The reason for my question is my checkered career as an academic, a civil servant in the U.S. Treasury Department, and a private-sector consultant. Tom asked me in turn, "Where are you working now?" I replied, "In the private sector," and Tom said, "Good, that's the current rotation."

I relate this story because I would like to talk about the U.S. tax system, or tax systems in general, from the three perspectives I have observed during my career (even recognizing that my private sector experience is not typical of such work).

So, my three perspectives are:

- As an academic, both teaching and conducting research at two Washington-based think tanks. In these capacities, I analyzed the tax system as an observer, constructing and applying economic models, making simplifying assumptions, searching for tractable results, and hopefully drawing meaningful implications of current tax laws and procedures.
- As a federal government worker, primarily at the U.S. Treasury's Office of Tax Analysis, providing tax policy advice to senior government officials, often within choices constrained by the agenda and political views of the administration I was working for.
- As a private-sector consultant, working in developing countries under contract to USAID or the World Bank. Not only did I make recommendations on tax policy and tax administration, but I also helped government counterparts to implement these recommendations, constrained by their own resources and capabilities.

So what have I learned from these three perspectives, other than that Washington, DC, is a lot more comfortable than Astana, Kazakhstan? I have come to two conclusions:

- Conclusion 1: From all three perspectives – academic modeling, providing policy advice to U.S. government officials, and recommending and implementing tax policy in developing countries – the analyses required to effectively serve in each role are very complicated.
- Conclusion 2: They are all complicated for a similar reason; specifically, the analysis, advice, recommendations, and implementation all occur within systems. This is true whether the systems are well defined or not and whether we explicitly recognize the systems or not. Determining the nature of the system, who the key players are, and how they all interact is a very tricky business.

So this is what I would like to discuss today – the systems we invoke as analysts, policy advisors, or implementers of tax reforms, and whether these systems, if we try to think about them formally, are appropriate for the task at hand. This systemic view of taxation is hardly a new idea. In fact, along the way, I would also like to note a few economists who, in my view, have done path-breaking work in framing issues systemically and, as a result, have opened up possibilities for deeper analysis of what we mean by sound tax policy and tax administration. From a personal point of view, my own initial exposure, in a practical sense, to considering economics in terms of systems was at the Federal Reserve Board where I worked in the Flow-of-Funds Section of the Research Division for three years in the mid-1960s. I found it amazing that we could trace the flow of finance through the economy – issuers and holders of debt, equity, demand deposits, consumer credit, and other financial assets by sector, including financial intermediaries, and all tied into the National Income

Accounts. Even simple "adding up" constraints were quite powerful – if someone issued a security then someone else had to hold it. At the same time, I was surprised by how sharp the dichotomy was between financial flows and the real economy. This was the case even though the Fed was also undertaking innovative research in integrating the financial sector into the macro-economic models of that era. So the first lesson of my exposure to economics as a system was that we often create artificial boundaries between systems – in this case finance and real economy systems – that outside the economists' world are very much co-joined. I will return to that thought a bit later.

I next learned about systemic thinking through two other economists during my time at the Office of Tax Analysis. The first was Seymour Fiekowsky, a senior member of the staff, who has a brilliantly intuitive general equilibrium mind. He did not need equations to determine the effects on sector X of a tax on sector Y; he just knew it. If we were skeptical, he would show us an illustrative spreadsheet. The interconnected economic system came further alive when the Treasury was able to support John Shoven and his colleagues who were doing early work in incorporating tax factors into multi-sectoral CGE models, again formalizing a systems approach to policy analysis.

These first generation models opened up a whole new world of possibilities in bringing together, in a single system, factor and product markets and calculating the effects of changes in taxation or other policy variables on market outcomes. They were path-breaking and formed the gateway to more complex models that introduced dynamic elements and more sophisticated representations of market imperfections, frictions, and linkages to other macro-economic models.

So now, still viewing economic actors as operating within a system, we have the kinds of models that our luncheon speaker today, Narayana Kocherlakota, has been at the forefront of developing—new dynamic, stochastic general-equilibrium based macroeconomic models. Very fancy stuff indeed. They would seem to have it all – markets but with frictions and imperfections, dynamic, subject to shocks, and capable of simulating changes in policy. But as Narayana would not only be the first to admit, but has actually written elegantly about in an essay accompanying the 2009 Annual Report of the Minneapolis Fed, published in May of this year, "Modern Macroeconomic Models as Tools for Economic Policy,"[1] there is much work to be done in developing the kinds of models that can fully inform policymakers. At least in terms of the recent financial crisis, he believes that macroeconomists do not yet have the tools to offer policymakers the advice they need.

Narayana tries to assess the problem objectively and is optimistic about finding solutions. He states in his essay, "…macroeconomists always leave many possible important features of the world out of their models...[They] abstract from aspects of reality because they must. At any given point in time, there are significant conceptual and computational limitations that restrict what macroeconomists can do" (p. 6). Despite the burden of these conceptual and computational limitations, he is optimistic that breakthroughs in theory and computational capabilities will take us where we need to be. To illustrate his concerns and where such breakthroughs are needed, he notes that current models "…do not capture a …messy reality in which market participants can trade multiple assets in a wide array of somewhat segmented markets."

One cannot disagree with bringing more real-world elements into our systems, and, hence, the need for conceptual and computational advances in our models. I would add to this story, however, and in a way that can bring me back to taxation and fiscal policy. I see the issue as not just expanding the range of markets but also the range of market participants. As we make our choices in defining our models and systems, are we giving enough attention to who the market participants are and how they might influence market outcomes? Yes, abstract we must, but as economists and policy analysts, are we making the right choices in what we include in our models and what we abstract from?

Even within the complex system of current general equilibrium-based macro models do the markets of these models accurately reflect real-world markets and, more specifically, the various types of players in these markets? Do they include, for example, agents, middlemen, information brokers, and others who can play important roles in the functioning of markets? In other analyses, we carefully study principal-agent problems, but are these kinds of issues reflected in these new dynamic stochastic general equilibrium models? I speculate that at the level of generality we tend to view market makers, we tend not to consider such players as important. How can mere middlemen be important? I suppose the answer is that most of the time they probably are not – except for those rare times when they are. But also, those rare times may not be quite so rare as we suppose. When billions of transactions are occurring globally, a rare event can occur more frequently in calendar time than we may think – such as when the stock market blipped down and back up for an instant earlier this year, apparently when multiple pre-programmed transactions occurred at the same time. Then, we look for culprits when the culprit may be nothing more than the fact that in complex, dynamic systems purely random events – coincidences, unintentional errors, bad seeds – can interact with the fundamentals of very low interest rates, high degrees of leverage, and the expectation that bubbles will never burst and can reach the sky; and the actions of agents who in pursuing their own agendas – such as mortgage brokers offloading to investors' high-risk mortgages they have originated or rating agencies providing ratings desired by their clients at a price or hedge funds operating their own highly speculative ventures – can generate large-scale consequences. And voila! Systemic failure. Or in other words, it is complicated.

But let me return to the taxation and fiscal policy. To summarize this point, we have three elements to deal with: highly interconnected dynamic systems, multiple players both principals and agents, and random elements.

Now, what does all this mean for tax analysis, tax policy or the implementation of policies or administrative processes? The most important implication is that since, in my view, in all realms, transactions occur within a system, we have to define the system, identify the critical players, and also be alert to the possibilities of totally unexpected occurrences. Depending on the issue, there is the analytical system, the policy system, the compliance system, and possibly others. Let me offer some examples and in the process recognize at least a few other economists who view taxation in terms of systems, in particular Richard Bird, Joel Slemrod and Gene Steuerle. And here I must confess a more personal tour rather than anything close to resembling a literature review.

VAT versus retail sales tax: does it make any difference? (An example from Richard Bird.) At the most abstract level, the point is often made that these two ways of taxing consumption are pretty much the same; you can tax consumption in stages (under the VAT) or at final sale (under the RST), and you will have the same result. Of course, everyone who has looked in detail at the issue knows that this is not the case for a variety of design and administrative reasons. For example, the retail sales tax at the state level generates about 40 percent of its revenue from business-to-business transaction, so it is not a very pure tax on consumers at all.

In that event, the question from a purely analytical perspective is: when is it okay or good enough to say they are the same and when is it not? It obviously depends on the degree of abstraction you are concerned about. For an introductory undergraduate public finance class, it's probably okay to say that there are two ways of taxing consumption, perhaps with some caveats to be noted in their actual application. For comparisons across national tax regimes to examine the extent to which consumption versus income taxes are used, it's probably okay as well to say some tax regimes rely more on income and others more on consumption taxes and consider both VATs and RSTs to be consumption taxes. In most real-world settings, though, we certainly would not say they are the same. And indeed our policy recommendations would depend importantly on how we define the policymaking cum compliance system.

Here's an example: Five years ago my firm at the time was retained by the Government of Puerto Rico to design a policy regime to broaden the base, reduce the rates of the income tax, and also raise additional revenues from a broad-based consumption tax which Puerto Rico did not have. Richard Bird took the lead on the consumption side and carefully examined the pros and cons of a VAT vs. an RST and concluded a VAT would be preferable for Puerto Rico. The decisive factors were several real-world considerations: the broader feasible base from taxing services under the VAT; the difficulty of excluding a substantial number of business-to-business transactions under the RST as already noted; the lower collections costs associated with getting a large share of revenue from a common point when goods enter the island; and the loss of revenue from exempting small retail businesses from an RST regime. In my view, Richard's paper supporting the position was a superb example of policy advice that incorporated real-world administrative considerations. None of the factors identified would come into play if only the conceptual equality of the two taxes is considered. So we proposed the VAT.

And now for the kicker, but first a bit of background. Puerto Rico has two major political parties – the Commonwealth Party that is in favor of Puerto Rico's current status as a quasi-independent territory of the U.S., receiving some federal benefits (e.g. food stamps) but able to have its own fiscal regime (along with other goodies such as its own Olympic team); and the Statehood Party that would like to be a U.S. state. Now, although our VAT proposal was perfectly fine for the Puerto Rico Treasury (the Commonwealth Party at the time), when the proposals went to the legislative branch, the Statehood Party prevailed and enacted an RST. Why? Because they did not believe our analysis or thought it was flawed in some way? No, they wanted an RST because they are the Statehood Party and U.S. states have RSTs, not VATs. End of discussion. Now that is the kind of unexpected element that comes into play in the real world. Clearly, despite our best efforts at systemic thinking, our system did not extend to the policy process itself nor was that process within our scope as consultants to the Puerto Rico Treasury Department. Perhaps our scope should have been broader, but, in any case, there is now a retail sales tax in Puerto Rico.

Does it matter which side of a transaction a tax is imposed on? (An example from Joel Slemrod.) If your system is composed of actors who willingly and fully comply with the tax regime (perhaps the costless or "frictionless" compliance of our idealized markets), then it does not matter. But compliance, of course, is costly so it does matter. Joel Slemrod, whose research has invariably viewed taxation as a system with compliance agents an important part of that system, makes just this point in his article in the June 2008 issue of the *NTJ*.[2] The remittance of a tax in Joel's view is part of the complex set of transactions that comprise the tax system. For the payroll tax, for example, the employer is also the collection agent for the IRS. Given the nature of the relationship between the employer and the employee, employers as agents are well chosen and highly efficient since they have their own payroll systems and also an incentive to maintain good, accurate information for their employees. Thus, if the employer collects and remits rather than the employee, we have a less costly, more efficient collection mechanism with clear implications for the operation of the system as a whole. So it does matter who collects and remits the tax or the side of the transaction on which the tax is imposed. In fact, if we thought about it for only a minute, we would never propose a payroll tax with the employee responsible for remitting the tax.

And that's just the point. For many academic economists who analyze tax policy, compliance or administrative costs are usually outside the formal models (except when specifically considered as a stand-alone subject). On the other hand, for many of us advising governments in the field, probably the first question we ask when a new policy is being proposed is this, "how are you going to administer it?" Indeed, Richard Bird has been long associated with the statement that "for developing countries tax policy is tax administration." To consider policy recommendations without examining the administrative and compliance issues is simply ignoring a critical part of the system. It would be like a false separation between the markets of the real economy and the financial transactions that lay behind them.

Gene Steuerle is another example of an economist who thinks in these broader terms. His analysis of policy issues and his blogs on the Government We Deserve are always raising the question of how provisions of law – whether tax law or healthcare reform law – will be administered. What institutions are required? How will they be organized? What information is needed to make the decisions required? How will the information be generated? All questions based on thinking of the systemic aspects of policy – the players involved, their roles, and whether attention has been given to how all the pieces fit together.

Are there real principal-agent issues in tax administration? Over a year ago, at a workshop presented by the American Tax Policy Institute, I was exposed to a serious problem in the administration of the earned income tax credit. I am sure it is well known that the EITC, as a provision of law, is complex and is a source of all kinds of compliance problems – people claiming the credit who are not eligible; eligible people failing to claim the credit; mathematical errors, etc. What I did not realize, and what the workshop documented, is the extent to which a certain class of so-called "tax preparers" would actually file tax returns that falsely claim the EITC to generate refunds for their taxpayer clients and then offer immediate payment to the client for a fraction of the refund claimed (the rest to be paid to the preparer). Further, these same preparers sometimes charged high interest rates on loans in advance of the refund and engage in other illegal practices preying on lack of knowledge of mostly low-income individuals and their need for immediate cash. In other words, they engaged in all the same practices as mortgage brokers offering no-docs, no-job, and no-income mortgages to would-be homeowners. They also would close up shop after the tax season and re-open under a new name next year.

These practices were among the reasons that the IRS has recently put in place a new oversight program to regulate the tax preparer industry (only a few states currently do). The IRS does not have the resources to check out all refund claims under the EITC and cannot effectively administer the provision. Clearly, for all taxpayers using these so-called tax preparers, the tax system is not the law as written, nor even as it could possibly be administered by the tax authorities, but rather as practiced by the shyster preparers. Are these "agents" included in our analysis of how the tax system affects low-income taxpayers?

Then there is the other end of the spectrum, the games that, for a period of time, some accounting firms were advising their high-end clients to play through convoluted transactions designed to hide income, convert ordinary income into capital gains, or generate artificial deductions. From a system perspective, these agents are indeed part of the system. If we are analyzing the system, we have to decide if the role of such agents is significant enough to be included in our models. If we are making policy, we have to anticipate that tensions and inconsistencies among provisions will bring forth agents to advise taxpayers on how to game the system. If we are implementing such policies, we have to consider how to control the agents or limit their influence.

Further, the tax system, however we define it, is continually changing, at times by the very nature of the interactions among the various players in the system. When I was at OTA, I co-authored a piece with a colleague as a chapter in a volume on federal income tax simplification, or tax complexity,[3] a topic like the weather in that, as Mark Twain would say, everyone talks about it but no one does anything about it. Our charge was to assess the implications for simplification in the program for comprehensive income tax reform in the Blueprints for Tax Reform study produced by the Treasury Department in 1977.

We began by identifying the various participants to be considered in such an assessment – individuals of moderate means, higher-income taxpayers, corporate officers, tax practitioners, and tax administrators, all grappling with complexity. We then suggested that fundamental tensions in the tax law – the preferential treatment of capital gains being a prime example – lead to certain tax-minimizing strategies on the part of individuals and corporate officers that, in turn, generate responses on the part of legislators and tax administrators, such as anti-tax shelter rules, that then render other tax-minimizing strategies more profitable in a continuously evolving dynamic. We termed the result dynamic complexity. One purpose of the initial treatment of capital gains – the realization principle – may be to simplify the calculation of gain (beyond providing an explicit subsidy), but the initial attempt at simplification yields further complexity over time because of the interactions among participants in a dynamic system.

My final exhibit of the complexity of the policy system in which we operate is the Tax Reform Act of 1986, enacted 24 years ago but still a benchmark piece of legislation, although the top rate of 28 percent is long gone. (Note, however, that the draft report of the Co-Chairs of President's Fiscal Commission has a top individual rate of 24 percent). Prior to that act, there was a tremendous amount of analysis by the Treasury Department – Treasury I and Treasury II – and so the administration was clearly pumped up for reform. But the reform was so sweeping, so grand with vastly broader individual and corporate tax bases and vastly lower individual income tax rates that it was believed to be indigestible on Capitol Hill. Political scientists predicted that such sweeping reform just does not happen – too many constituencies are negatively affected despite the broad public good and similar arguments. But it passed.

The post-mortem on the process is a book called *Showdown at Gucci Gulch* written in 1987 by two Wall Street Journal reporters in the Washington Bureau, Jeffrey Birnbaum and Alan Murray.[4] The book examined the entire process, cited all the players as reform moved through the House and Senate, the roles of President Reagan, Congressman Rostenkowski, Senator Packwood, and Senator Bradley, but could only summarize the reasons for the law's passage by their observation that no one wanted to be responsible for killing it; or in their terms "no one wanted the cat to die on their doorstep." Now that's a rather curious reason for the passage of legislation, all post hoc of course.

But now, from thinking of the interplay of participants in the dynamic tax policy system, let me try out an alternative view. We generally talk of random events as impacting a complex system and causing systemic failure—the big blow-up. But maybe the results of random events do not always have to be failure. Thinking symmetrically, why couldn't random events impact on a complex process and lead – just as improbably – to systemic success or maybe systemic serendipity? Maybe unlikely or improbable swans do not all have to be black; maybe, metaphorically speaking, they can be red or green. In all our modeling, let us not ignore the fact that just plain chance, luck, or karma – good or bad – is always lurking in the background. And the more complex the system, the greater the likelihood that something will go wrong – or even right.

So that is my message for the day. We need to think in terms of systems, certainly beyond frictionless markets and costless compliance, but even beyond the recognized frictions, such as wage, price stickiness, and costs of search and adjustment, and also consider in our analyses administrative and compliance systems and the roles of agents who likely have different agendas than their principals. We have to acknowledge that there are players that usually do not make it into the models and figure out how to formalize their roles – corporate staffs devoted to tax compliance, tax preparers, and tax administrators all confronted with complex laws that afford opportunities for gaming the rules, sometimes simply guessing as to what they mean, and even the possibility of just plain mistakes. And we still need to recognize that there are likely to be random elements affecting these systems in ways we had not thought of; so in addition to a good understanding of policy/administration/compliance systems, it also does not hurt to be lucky in any predictions we may make based on our analysis of causes and effects. Because to leave through the door through which I entered – tax systems are just very complicated.

Notes

1 Kocherlakota, Narayana, "Modern Macroeconomic Models as Tools for Economic Policy," Essay from Federal Reserve Bank of Minnesota, 2009 Annual Report, May, 2010

2 Slemrod, Joel, "Does It Matter Who Writes the Check to the Government? The Economics of Tax Remittance", National Tax Journal, June 2008, pp. 251-275

3 Galper, Harvey and Kaufman, Michael, "Simplification and Comprehensive Tax Reform", in Charles H. Gustafson, ed., Federal Income Tax Simplification, pp. 161- 190, American Law Institute, 1979

4 Birnbaum, Jeffrey H., and Murray, Alan S., Showdown at Gucci Gulch, Random House, 1987