Gaming the Giveth and Taketh of Government

Jim Tozzi[*]

Some fifty years ago when I began working for the Chairman of the Joint Chiefs of Staff as a commissioned officer, I was a developer of war games. War games were not "games" *per se* as presently seen on video games. These were large, mathematically-rigorous, simulations of military conflicts that were used to optimize our military strategies.

My mentor, Dr. Rufus Issacs, was the leading developer of differential gaming which was a giant mathematical leap from the two person–zero sum games developed by Dr. Von Neumann. In differential games, the strategies adopted by two players are dynamic and the mathematical models explored new realms of complexity As a result of my work with Dr. Issacs, I was inducted into the American Men and Women of Science.

All of the above took place during the earliest stages of the Vietnam War. The endless, long hours of work generated the need for diversions. I started to scribble ways on how game theory might be used to find optimal decision strategies for governmental decisions. In other words, if we could utilize game theory to address national defense issues why could it not also be used to address complex issues dealing with national resource allocation? The question of resource allocation became of paramount interest to me because when I left the Joint Chiefs of Staff and became involved in the oversight of the civil budget of the Army Corps of Engineers.

The long and short of my dabbling—I would hardly call it analysis—is that there is no game-theoretic, socially acceptable solution for the control of certain federal programs, such as those contributing to the federal deficit. What programs are contained in this particular class? Specifically, in a very simplistic manner, governmental programs might be divided into two groups—the "giveth" programs and "taketh" programs; in game theory terms the two aforementioned groups are combatants challenging each other to determine national strategies for resource allocation.

The bottom line is that there is no optimal strategy for controlling the size of the federal deficit because it is an attempt to control the "giveth" programs; nonetheless there is a chance to develop control systems for "taketh" programs, such as regulatory and federal tax programs. I leave it to modern day game theorists to examine and clarify my primitive analysis on the differences between the payoff functions for the "giveth" and "taketh" programs in order to provide mathematical support to my conclusions, if in fact it exists. In any event, I believe such a resource conflict is ideally suited to differential gaming.

Accordingly, we concluded that it is more promising to focus our efforts on the control of the regulatory state—not the size of the federal deficit. That realization coupled with the then timely publication of Dr. Alan Schmid, our attention changed from the control of federal spending, "giveth" programs, to the control of "taketh" programs, the issuance of federal regulations.