

THE CONGRESS AND STATISTICS

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*Thou shalt not sit
With statisticians nor commit
A social science
—W. H. Auden*

The Congress often takes Auden literally. The vast majority of Representatives and Senators are not well acquainted with the science of statistics and like most Americans they have difficulty assessing probabilities associated with various unpleasant and pleasant future events. Yet, the Congress consumes vast quantities of scientific, economic, and social data. The numbers affect both policy decisions and Congressional procedures. Much like Voltaire's *Bourgeois Gentleman* who exclaimed "Good heavens! For more than forty years I have been speaking prose without knowing it," the Congress practices the science of statistics without knowing it.

I shall illustrate the point by first examining the Congressional budget process. I choose this example because I know this area best, but I am sure that an equally compelling case could be made in many other policy areas.

The Budget Process

For almost 200 years before 1974, the Congress produced a national budget annually, but it was done without a coherent set of decision-making rules. Early in his second term, President Nixon was able to attack the Congress effectively, arguing that they could not spend responsibly because they had no formal mechanism for adding up their spending

and tax decisions and no formal mechanism for relating total spending to total taxes. The President began to impound monies, that is to say, he refused to spend all the money Congress appropriated. Before the constitutionality of his actions could be decided by the Supreme Court, the Congress moved explicitly to restrict the President's impoundment powers. (The President lost a series of cases at the level of the U.S. Court of Appeals, but won one involving spending by the Department of Housing and Urban Development.) But they knew that Nixon had made a strong case and they felt that they could not reduce the President's power over spending unless they simultaneously created a more rational budget process for themselves.

The process that they invented is highly dependent on modern sources of data. It would not have been workable with the data available in the 1920s.

The process begins by setting targets for aggregate spending, revenues, and the deficit in a budget resolution for a 10-year period. The targets reflect estimates of the aggregates implied by current law plus increases or decreases for policy changes. For example, the budget resolution for fiscal 2004 established an allowance of \$400 billion over 10 years for extra spending for a new prescription drug program within Medicare and established a limit of \$350 billion in the Senate for the ten-year cost of any tax cuts.

Before adjusting for policy changes, Congressional analysts must estimate the spending and revenue totals implied by current law. This is no easy trick. Entitlement spending and tax revenues are sensitive to the state of the economy; so the process must begin with an economic forecast. The national-income-accounts data produced by the Bureau of Economic Analysis in the Department of Commerce are essential in

developing the forecast, as are the unemployment data and price indices developed by the Bureau of Labor Statistics (BLS) in the Department of Labor.

But it is not enough just to have economic data. Forecasts of the state of the economy will help analysts estimate the number of people eligible for food stamps, but they also have to estimate how many of the eligibles will apply, and for that they will require administrative data from the operating agency, and they may be aided by sources of micro data, such as that from the Current Population Survey. For revenue estimates, the forecast of aggregate income is just a beginning. Analysts must decide how much of the income will be taxable and how the taxable income is distributed among taxpayers facing different effective tax rates. Revenue analysts work intensely with very large samples of tax returns and most analysts working on different parts of the budget accumulate huge databases over their careers.

The nature of the work has been altered profoundly by improvements in the technology of computing. As recently as the early 1980s, when I headed the Congressional Budget Office, analysts would leave their computers on all night to run models that utilized large databases. Now the same tasks can be performed in a few minutes.

The results of the analysts' work are extremely influential in the decision making process. It was noted that the budget resolution set aside a \$400 billion allowance for a prescription drug program. That program is being designed expressly so that analysts will come up with a \$400 billion cost estimate. As a result, the design has taken on some peculiar characteristics, leading to some strange gaps in coverage. If analysts had decided to assume that drug costs would rise at one percent less per year than in the official cost

estimate—probably not a statistically significant change—the Congress would have been allowed to make the gaps in coverage less significant.

Dealing with Uncertainty

Although forecasting budget aggregates and the spending and revenue effects of policy changes involves the best efforts of a large group of very able people, the results are not very satisfactory. Budget forecasts are notoriously inaccurate. Forecasts of the budget balance made in January for the upcoming fiscal year are likely to be off more than \$100 billion after adjusting for the effects of policy changes. The average error in forecasting the budget balance five years out exceeds 4 percent of the GDP, that is to say, the forecast of the budget deficit made in January 2003 for fiscal 2008 is likely to be off by almost \$500 billion.

The Congress does not deal well with the resulting uncertainty. Their procedures demand point estimates. They must appropriate precise amounts of spending for different government functions. Although one might conceive of them appropriating a range of different spending totals depending on different contingencies, that has rarely been contemplated. Consequently, they use point estimates every year, and the debate proceeds as though the estimates are totally reliable. The next year the estimate of the cumulative budget deficit over 10 years is changed by hundreds of billions of dollars, but the debate again proceeds as though the new and very different forecast can be accepted with certainty.

A more sophisticated debate would spend considerably more time on the policy implications of being wrong, but legislators tend to be a self-confident group of people.

They believe that it will be easy to correct for forecast errors next year, even though it seldom is.

Improving Forecasts by Improving the Data

Could forecasts be improved if the Congress spent more money to improve the quality of our statistics? That is not an easy question to answer meaningfully. It is true that bad data and delays in collecting good data often lead to forecast errors. However, forecast errors are also caused by a myriad of surprises ranging from the weather to international crises to stock market crashes. Our inability to predict such things is probably more important in producing bad forecasts than bad data.

Nevertheless, most social scientists believe that it would be worth spending more to improve social and economic statistics. Forecasts would not improve a lot, but they should improve a little. Unfortunately, social scientists constitute the only important lobby advocating more spending on economic and social data and there aren't many of us. One would think that the business community would also have much to gain but they are conflicted. While they would like better data, they hate the cost of responding to questionnaires and filling out forms. The Congress is very sensitive to these concerns.

There are some areas where additional spending might help a great deal. Data on state and local government budgets as they appear in the national income accounts are of extremely low quality—a matter of some importance currently as economists try to assess the effects of state budget crises on the rest of the economy. It is extremely difficult to separate budget issues affecting state as opposed to local governments until the census of government results are available with a long time lag. A more generous data gathering budget might significantly speed up the process.

Congress designs numerous tax policies to encourage saving and yet, our knowledge of household saving behavior is abysmal. A major source of knowledge—the Consumer Expenditure Survey—reveals that survey respondents provide logically inconsistent answers. Their answers regarding after-tax income and consumption levels imply saving levels that are inconsistent with reported changes in net wealth. It is evident that respondents tend to understate their incomes significantly. Statistics Canada makes a significant effort to reconcile inconsistencies in the answers to a similar survey. Our surveyors do not have the same resources.

There are other areas where the connection between budgets and the quality of data are less certain, but I personally believe that somewhat more spending is worthwhile. I do not believe that our statistical agencies have sufficient resources to do basic research, especially on the changing structure of the economy. Such research might help improve sample designs and other data gathering techniques. Would such research reduce the need for large revisions in historical economic data? It cannot be promised any more than that additional cancer research will find a cure. But it is worth a try.

Forecast errors can often be better understood once it is realized with subsequent revisions that the data available when the forecasts were produced were quite inaccurate. For example, a major reason for recent errors in revenue forecasts was that revenue forecasters overstated the portion of the GDP that turned out to be taxable. Later it was learned that forecasters had been working with estimates of wages and salaries that were too optimistic. Subsequent downward data revisions did not explain the entire forecast error, but they explained a significant part of it. The data collection error led to an improvement in methods that did not directly cost significantly more and there is a moral

to this story. Having Congress throw money at the relevant agencies indiscriminately is not warranted. The agencies must face sufficient budget stringency to be efficient, yet garner enough resources to produce high quality data. It is a fine line to walk, but there is little doubt in my mind that Congress has erred historically on the side of being too stingy.

During the period 1990–1998, the Congress made a vigorous attack on the budget deficit and one of their most effective tools was a cap on total discretionary spending. The cap was particularly effective in fiscal 1993 and beyond. The total spending implied by the cap was distributed to appropriations subcommittees. Giving more to statistical agencies during that period meant giving less to someone else within the same subcommittee and our statistical agencies faced strong competition. I was a member of the board of the National Association of Business Economists early in the period and we lobbied in favor of the Boskin initiative in the first Bush administration. Michael Boskin was the president’s Chairman of the Council of Economic Advisers and he persuaded the president to back more spending on statistics. As I discussed the matter with Appropriations subcommittee staff, I was struck by how difficult it was to pry one million dollars away from other agencies. One million dollars was still a lot of money at the subcommittee level, even though total federal spending had already passed \$1.3 trillion. Nevertheless, the Boskin initiative met with some success. The budgets of the statistical agencies like the Bureau of Economic Analysis (BEA) and the BLS did not do badly between 1990 and 1993.

However, BEA was treated poorly between 1993 and 2000 with its budget lagging the inflation rate. BLS did considerably better. The two agencies are in the

jurisdiction of different appropriations subcommittees, and that might affect budget outcomes. It would take a lot of research to prove the point, but it could be that BEA faces more politically potent competition within their subcommittee. For example, BEA competes with the National Oceanic and Atmospheric Administration (NOAA). NOAA has been famous over the years for its acumen in budget politics.

After a budget surplus first emerged in 1998, the cap on discretionary spending was no longer effective and budgeting became quite undisciplined. The attack of September 11 and the launch of Operation Enduring Freedom in Afghanistan provided further excuses for undisciplined spending, even on areas remote from the emergency. The lack of spending discipline may have been deplorable, but the statistical agencies benefited and BEA has been treated especially kindly in recent budget wars. Between fiscal 2003 and 2000 their budget rose more than 14 percent per year. BLS's budget rose 6 percent per year over the period, about the same as between 1993 and 2000. The budget of the Census Bureau was distorted in 2000 by the need to conduct the decennial census, but it rose over 17 percent per year between 2001 and 2003.

Although President Bush's budget has recommended handsome increases in the budgets of the main statistical agencies for fiscal 2004, I suspect that the generosity of the Congress will wane quickly. We are again fighting budget deficits and discretionary spending is likely to be quite restrained as we enter fiscal 2004 and beyond. Not having a powerful political constituency, the budgets of the statistical agencies may be squeezed more than most.

Some believe that our statistical agencies might do better in the competition for funds if they were consolidated into one statistical office, much like the Canadians

consolidate their main statistical activities in Statistics Canada. I believe that this is far from certain. It would depend crucially on the strength of the competition from other activities governed by whatever appropriations subcommittee would be given jurisdiction over the new agency.

Grant Formulas

The discussion thus far has emphasized the role of statistics in the budget process. Statistics also play an important role in distributing Federal money to states and localities. For example, the population of a state, the extent of poverty, and housing overcrowding are among the factors that determine how community development block grants are distributed. Miles of road and estimated miles traveled on certain highways help determine how much states get from the highway trust fund.

In debates over formulas, one seldom hears legislators question the quality of the underlying statistics. That is probably because known numbers are often used to come up with a formula implying a distribution of spending that will buy a majority vote in favor of a program. Substance is often brushed aside in these “formula fights,” but once a formula is in place, it is difficult to change because every change creates losers. To the extent that there is change, various constraints and exceptions are often applied to the basic formula so that states which feel that they have been treated unfairly get some concessions. As a result, the rules for distributing the money often become more and more complicated over time.

Sometimes the Congress would like to fine-tune the distribution to a ridiculous degree. I remember a Congressman who wanted to distribute money to neighborhoods

based on the neighborhood unemployment rate. It was difficult to explain that a gigantic national sample would be necessary to get accurate data for such small areas.

Political Rhetoric

Congressional debate over statistics reaches an intellectual nadir when numbers are used in partisan debates over which political party does a better job in managing the economy. Presidents take credit for favorable movements in economic indicators from the day that they take office and are blamed for unfavorable movements, as though the economy can be driven by government like a finely tuned automobile. Participants in the debate may refer to rates of change in a variable or to rates of change of rates of change if that is more favorable to their case. If two surveys reach contradictory conclusions, the one that favors the politician's stance will be cited without any acknowledgement of the existence of the contradictory evidence. Much may be made of changes in the unemployment rate from month to month that are quite insignificant to a statistician.

Politicians easily get away with their rhetoric because they are unlikely to be challenged by the media. Few reporters feel secure in discussing numbers and editors and TV producers generally feel that numbers are extremely boring and should be kept out of stories to the extent possible. I suspect that the public is more tolerant of numbers than the media believes, largely because reporters, editors, and producers are more likely to be trained in English literature than in statistics, economics, or accounting. There is no doubt that those who run the media are, in fact, bored by numbers.

Conclusions

This article has undoubtedly seemed more critical of the Congress than I intend it to be. I have argued that they are crass in their use of rhetoric involving statistics; that they are naïve in dealing with the uncertainty associated with statistics and economic forecasts; and that they are too stingy in their spending on statistical agencies. It is surprising that policies do not turn out to be much worse than what actually emerges.

But I certainly do not mean to imply that the world would be a better place if the Congress were led by professional statisticians or by economists for that matter. Our adversarial system of government generally reaches a conclusion closer to truth than is present on either side of the partisan debate.

The Congress has the opportunity to summon the best experts in the world to give testimony on any topic including statistics. The experts often disagree especially when they are social scientists. The legislators listening to the testimony are in the position of lay jurors having to judge the validity of expert testimony on both sides of a court case. To paraphrase Winston Churchill, it may be a terrible way to make important decisions, but it is the best way available.