REPLY TO DIAMOND'S AND CUTLER'S REVIEWS OF GENERATIONAL ACCOUNTING
LAURENCE J KOTLIKOFF
National Tax Journal (1986-1998); Jun 1997; 50, 2; ABI/INFORM Global
pg. 303

REPLY TO DIAMOND'S AND CUTLER'S REVIEWS OF GENERATIONAL ACCOUNTING

LAURENCE J. KOTLIKOFF*

Abstract *– Generational accounting is less than seven years old, but it has spread around the world, from Norway to New Zealand. So far, 19 countries have constructed or are currently constructing generational accounts. Most of these accounts have been produced by, or with the help of, government ministries. This growing use of generational accounting makes its scrutiny of more than academic importance. This article replies to Peter Diamond's and David Cutler's thoughtful critiques of generational accounting.*

INTRODUCTION

Generational accounting is less than seven years old, but it has spread around the world, from Norway to New Zealand. So far, 16 countries have constructed generational accounts and other countries are following suit.[1] Most of these accounts have been produced by, or with the help of, government ministries.[2]

*Boston University, Boston, MA 02215 and The National Bureau of Economic Research, Boston, MA 02138.

This growing use of generational accounting makes its scrutiny of more than academic importance. Diamond's (1996) and Cutler's (1993) reviews of generational accounting are, therefore, quite timely. They are also very thoughtful. Paying them proper respect, as I hope to do, requires focusing primarily on areas of disagreement and simply pointing out that there is much on which we agree.

DIAMOND'S REVIEW

What Does Generational Accounting Calculate?

Diamond begins his review by stating that generational accounting is an anomalous mix of cost-based calculations, such as the Social Security Trustees Report, and utility-based calculations. I concede that, in presenting generational accounts, I and my colleagues, Alan Auerbach and Jagadeesh Gokhale, have been less precise than we might have been about the nature of our generational accounting exercises. The fact is that we use generational accounting to do two things—to make cost-based calculations and to make utility-based calculations.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Cost-Based Calculations

The cost-based calculations we do are very similar in spirit and practice to those done by the Social Security Trustees in their *Annual Trustees Report of the Social Security Administration* in trying to assess the sustainability of the OASDHI program. The social security actuaries form the present value of projected social security expenditures and taxes over the next 75 years and then ask by how many percentage points would the payroll tax rate have to be increased, on an immediate and permanent basis, to achieve intertemporal (in this case, 75-year) budget balance. In their calculations, the actuaries treat the social security trust fund as equivalent to having more taxes in present value. They consider a range of real interest rates centered around 2.3 percent, which, incidentally, is less than the current 3.5 percent yield on 10-year indexed U.S. Treasury bonds.

In generational accounting, we compare (a) the present value of all the net tax payments (all taxes paid net of all transfer payments received) to all (federal, state, and local) governments by currently living generations with (b) the present value of government bills, which we define to be the present value of projected government purchases of goods and services plus the government's official net liabilities. The difference between these two amounts represents the fiscal costs to be shouldered by future generations assuming no larger payments by current generations. In addition to this calculation that treats future generations as the sole residual bill payer, we have also been doing calculations that very closely parallel that of the social security actuaries. Specifically, we've calculated the requisite alternative immediate and permanent tax hikes or expenditure cuts needed to obtain present value intertemporal budget balance. In the case of the tax hike, were we to exclude all fiscal programs except social security, our calculation would be identical to that done by the actuaries. Like the social security actuaries, we've considered and presented results based on a range of real discount rates.

Utility-Based Calculations

Generational accounting's utility-based calculations arise when we compute changes in generational accounts arising from particular policy changes. We view our calculated generational account changes as approximating the true utility changes (measured as wealth equivalents) of the generations affected by the policy being modified. The real question here is not what we are doing, but how we are doing what we are doing—specifically, how well do generational accounting's implicit incidence assumptions do in approximating the true incidence of policies that will potentially alter the time path of factor prices and economic distortions?

Fehr and Kotlikoff (1997) provide one attempt to address this issue. They use the Auerbach–Kotlikoff Dynamic Life-Cycle Simulation model to compare the exact welfare changes experienced by different generations in response to policy changes with the approximation of the welfare changes provided by changes in generational accounts. Fehr and Kotlikoff find that generational accounting does a fairly good job in approximating actual generational incidence, with the approximation being closest for policies involving the smallest changes in economic incentives.

Diamond doesn't consider this study in his review. Had he done so, he would

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

have realized that part of our objective is certainly to use generational accounting to approximate generational incidence. In stating this objective, I don't mean to imply that generational accounting is the only way or, indeed, necessarily the best way to measure intergenerational incidence. If I had my way, I'd force all politicians, the press, and the public to digest the results of the best dynamic stochastic general equilibrium model of the economy I could develop. But because this is impractical, I and my colleagues have turned to generational accounting to try to convey some sense of the generational consequences of policy.

Now were Diamond to look at my paper with Fehr, he would, no doubt, object that the model being used doesn't incorporate uncertainty and that, with uncertainty and incomplete insurance markets, generational accounting may do a much poorer job in approximating generational incidence, which, in this case, would refer to policy-induced changes in generations' levels of expected utility. This may well be so, in part, because the appropriate discount rates to use in forming changes in generational accounts may be policy specific and, in part, because policy changes may alter the degree to which the government implicitly insures the public. Because this issue is of such importance, I am currently at work with my colleagues in studying the question. Hopefully, other economists, including Diamond, will join us in giving this question the serious attention it deserves.

TREATMENT OF PROPERTY TAXES AND INFRAMARGINAL TAXATION OF CAPITAL INCOME

Diamond questions our decision to capitalize inframarginal capital income taxes, but not residential property taxes. The reason is that we assume that residential property taxes represent payments for local goods and services and that zoning precludes their falling on business capital. Diamond also questions one particular detail of our calculation of inframarginal capital taxes on which, I agree, we can improve our estimates.

Alternative Projections

Diamond points out that there are many alternative cost-based projections that can be made. I certainly agree. In our own work, we've entertained a range of alternative scenarios involving the way the federal government might respond to and when it might respond to what is clearly an unsustainable policy position. Each of these scenarios delivers, however, the same message: unless the U.S. government takes dramatic steps soon, it will leave an enormous net tax burden for our children.

Diamond also points out that the government projections that we use in generational accounting are somewhat crude. I share his concern and believe that the various government forecasting agencies can and should do a substantially better job in formulating revenue and expenditure forecasts.

In passing, I might point out for the reader one of these calculations. Using a three percent discount rate, we've found that, given the latest expenditure projections, the requisite immediate and permanent federal income tax hike needed to produce intertemporal budget balance is 54 percent.[3] If one delays raising tax rates for ten years, the requisite hike is 62 percent.

Positive Generational Accounting

Diamond raises the issue of using generational accounts to help under-

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

stand changes in cohort consumption. Here, he is considering Gokhale, Kotlikoff, and Sabelhaus (1996). I share his view that generational accounts may not be perfect measures of how cohorts value their future treatment at the hands of the government. Those cohort members who are liquidity constrained or are myopic may discount their future net tax streams at higher rates than those who are not. In addition, one's *ex ante* forecast of future policy rather than the *ex post* realization of that policy should determine the generational account cohorts look at in deciding how much to consume.

However, my sense is that liquidity constrained and myopic households explain, at most, a small fraction of aggregate consumption. I also think that the proper way to deal with alternative subjective beliefs about future government policy in forming the generational accounts (which one then correlates with generations' consumption amounts) is to do what Gokhale, Kotlikoff, and Sabelhaus (1996) do, namely, consider alternative beliefs and check whether one's conclusions depend on the way one formulates the accounts.

Generational Accounting Telescoped

Diamond describes our calculation of the fiscal burden being left to future generations given current policy as *telescoping* what future generations will pay. He again argues that our calculation here is a cost-based, rather than utility-based, exercise. He's again right. We are not, in this telescoping, calculating the incidence of a policy change. Instead, we are trying to characterize what future generations collectively would have to pay.

Although we never described this calculation as a utility-based exercise, we have used a discount rate in excess of the government's short-term real borrowing rate in our base-case results. But we've also presented the results using a lower discount rate. Diamond is saying here that he finds telescoping based on the lower discount rate more compelling. I also read him to be saying that he agrees with our use of a higher (risk-adjusted) discount rate in calculations of changes in generational accounts (a utility-based calculation).

I basically concur with Diamond's views here, but want to point out two things. First, by showing results for a range of discount rates, we have, I believe, satisfied his discount-rate preferences. Second, the government's real borrowing rate that Diamond appears to have in mind is about three percent. This is certainly close to the short-term real borrowing rate of the government, but the government also borrows long term, primarily through nominal debt instruments. The real rate the government will end up paying on these instruments depends, then, on the evolution of inflation.

Over the past 15 years, we've seen 30-year Treasury Bond yields that have exceeded short-term inflation rates by as much as eight percent. Moreover, in our calculations, we are discounting flows well beyond 30 years, which is the longest maturity of federal bonds. So we don't even observe a truly long-term nominal government borrowing rate. Given that we don't know precisely what the government's current expected long-term or, for that matter, medium-term real discount rate is, it seems prudent to do what we have been doing—show the results for a range of discount rates and see whether our inferences about the size of the relative burden facing future generations compared with that facing newborns is

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

sensitive to the choice of the discount rate. In our most recent calculations, this ratio was 2.5 using a six percent real discount rate and 2.2 using a three percent real discount rate; i.e., using either discount rate, future generations will, over their lifetimes and on a growth-adjusted basis, face twice the fiscal burden of today's newborns assuming today's newborns as well as all other current generations face, over their remaining lifetimes, the net tax burdens suggested by current policy.

Generational Balance—Normative

In discussing the criterion of *generational balance*, which I and my colleagues have defined as a situation in which future generations face the same lifetime net rate (lifetime net tax payments as a share of lifetime labor income) as do newborns, Diamond, in the text and in his Appendix, points out that this comparison needs to be done on a cost basis. I concur. But again Diamond seems to be suggesting that we are doing these calculations on a utility basis because of the fact that we use a six percent real discount rate rather than a three percent one in our base-case calculations; i.e., Diamond's real concern here seems to be that a six percent rate is too high for a cost-based calculation. But we've also been concerned that discounting at six percent might be too high, which is why we've also presented results discounting at three percent.

Having said this, I don't mean to deprecate Diamond's contribution here. On the contrary, I find his distinction between cost-based and utility-based calculations a very useful way of explaining why we would want to discount generational account changes at a higher rate than the rate we use in forming the residual burden facing future generations or in related cost-based exercises.

Diamond goes on in his discussion of generational balance as a normative social welfare criterion to say that intergenerational redistribution will, with probability one, be a part of a social welfare optimum and that generational balance will not, generally, be a part of that optimum. I disagree. Any social optimum that leaves the economy in a steady state will be one in which net tax rates are stabilized. Generational balance is a prescription for stabilizing net tax rates across generations, so it will be a feature of a long-run social optimum, assuming that optimum eventuates in a steady state. Of course, in the context of uncertainty, the economy cannot be expected to ever reach or stay in a steady-state position. But the economy can be expected to fluctuate around some long-run growth path. In such a stochastic, but stationary, economy, net tax rates must also be stationary. They can't forever rise or fall.

Generational Balance—Political

In discussing the political consequences of politicians using generational balance as their fiscal policy guide, Diamond raises three concerns. First, he worries that generational balance would be achieved not through real policy changes but through promised future policy changes that never materialize. Second, he worries that generational balance doesn't have anything to say about redistributions between currently living generations. Third, he worries that, to achieve generational balance, politicians might cut infrastructure investment rather than government consumption.

The first concern—that politicians will lie—is a real one, but I don't see how

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

making them publicly discuss and plan how they intend to treat future generations will lead them to lie more about that treatment than they already are. Our politicians in Congress and the Administration are currently using a fiscal planning horizon of only five years – this year through 2002. In using this horizon and ignoring the retirement of the huge baby boom cohort that is just over this horizon, they are guaranteeing us and our children nothing short of a fiscal disaster. I think forcing our politicians to do long-term fiscal planning will concentrate their minds on their obligation to the next generation. In any case, my obligation and that of other public finance economists inside and outside of the government is to provide the politicians the best set of tools we can for doing long-term fiscal planning and hope they will act honorably in applying these tools.

Diamond's second concern—that generational balance doesn't ensure equity among currently living generations—also seems misplaced. Neither I nor my colleagues have suggested that achieving generational balance is the only measure or even the single most important measure of fiscal success. It represents just one of several critical criteria that I think define an efficient and equitable fiscal policy. Equity among living generations is another of these criteria. Indeed, generational accounting was developed not just to consider generational balance, but also to determine how policy changes would alter the distribution of well being among those generations now alive.

Diamond's third concern involves the fact that we have, as yet, not come up with a clear-cut way of allocating across generations the benefits of government consumption. Given that we don't allocate this spending, Diamond worries that, in trying to achieve generational balance, politicians will be biased toward current consumption spending over investment spending, because they won't be able to charge future generations for disproportionately higher benefits accruing to them from government investment by levying net taxes on them at higher rates than those facing current generations.

At a practical level, I doubt this concern is very important. Most government investment programs benefit current as well as future generations. Some, such as protecting the ozone or safely disposing of nuclear waste, may benefit future generations much more than current ones, but others, like repaving roads, benefit current generations much more than future ones. My guess is that achieving generational balance would not impede an intergenerationally equitable policy of government investment. In any case, neither I nor my colleagues have suggested that generational balance is a *sine qua non* for generational equity. We've simply suggested that this is an important reference point for politicians in thinking about their intergenerational distribution policy.

In general, Diamond views the political outcomes as driven, in large part, by the way questions are framed for politicians and the manner in which data are presented to them. Diamond worries that politicians would become fixated with generational accounting were it readily available and ignore other useful fiscal policy measures and issues. I have more faith in politicians and the public than does Diamond. But, in any case, it's not for economists to "package" the facts so as to keep politicians from misusing or misreading them. Our job as economists is to describe economic reality to the best of our ability and then let the chips fall where they may.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

CUTLER'S REVIEW

Does Generational Accounting Answer All Fiscal Policy Questions?

In reviewing *Generational Accounting* (Kotlikoff, 1992), Cutler pays more attention than does Diamond to my indictment of the budget deficit as an inherently meaningless accounting construct bearing no necessary connection to underlying fiscal policy. In discussing the argument, however, Cutler suggests that I claim that "generational accounts are the *only* positive measure of fiscal policy." This is not the case. To the contrary, I devote an entire chapter of the book to describing four fundamental aspects of fiscal policy—generational policy, intragenerational policy, spending policy, and incentives policy. I point out (a) that the deficit doesn't measure any of these policies, (b) that generational accounting attempts to measure just one of these—generational policy, and (c) that the government needs to measure the other three.

Since I wrote the book, the National Income Accounts have begun doing a better job in measuring government spending, by which I mean government consumption. The new accounts impute rent on government durables and add this sum to government purchases of nondurables to determine government consumption.[4] In contrast, there is, as yet, no government effort to do intragenerational accounting or to provide an assessment of the total effective tax rates on labor supply and saving faced by different segments of American society.[5]

Are Generational Accounts Appropriate?

Cutler acknowledges the problems I raise with deficit accounting, but then suggests that we can construct a better deficit measure that is based on the impact of the deficit. Because I don't know what "the" deficit is to begin with or what "it" is supposed to measure, I find this line of reasoning rather circular. It seems to me that we should construct objective and well-defined measures of the government's intergenerational distribution, intragenerational distribution, spending, and incentives policies. Armed with these measures, we can then test how these policies affect individual behavior and the economy.

In the case of changes in generational accounts, Gokhale, Kotlikoff, and Sabelhaus (1996) demonstrate that the enormous postwar redistribution via pay-as-you-go entitlement programs from young and future generations to contemporaneous older generations has produced precisely what the life cycle model would predict—an enormous increase in the absolute and relative consumption of the elderly. Indeed, since 1960, the elderly's share of aggregate household consumption has risen more than four times faster than has their share of the population. In redistributing ever growing sums from young savers to old spenders, the government has cut our nation's saving and investment rates in half, producing an economy with anemic labor productivity and real wage growth.

Ricardian Equivalence

Cutler argues that parental concern about the next generation presents a *difficulty* for generational accounting, because in such a Ricardian world, the intergenerational distribution of resources would have no economic effect. In my view, there is now overwhelming evidence against Ricardian equivalence. Part of that evidence is provided by the postwar record of

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

changes in generational accounts. Changes in these accounts record a dramatic increase in the relative resources of the elderly, which, as noted, has coincided with a dramatic increase in their relative consumption.[6] This is exactly the opposite of the Ricardian prediction. The cohort evidence is complemented by a series of empirical studies of extended families using microdata.[7] These studies provide very strong evidence that parents and children do not share resources in the Ricardian manner. Even if Ricardian equivalence did play a significant role in the U.S. economy, which it surely does not, one would still want to construct generational accounts to assess the strength of that role and changes in that role over time.

Uncertainty

Cutler suggests that the accuracy of generational accounts in measuring fiscal policy requires that "individuals are affected by future government actions as much as by present actions." I think this statement is too imprecise to know what it means. We live in an uncertain world. Part of that uncertainty involves future government fiscal policy. Future government actions must, then, be viewed as the realizations of *ex ante* random variables. When Cutler refers to the government changing its future actions, I presume he means that the government is announcing a policy change that alters the distribution of its future actions. How such announcements should affect current individuals depends on the nature of the policy change. Moreover, when the government acts in the present, it is simultaneously altering the distribution of its future actions because fiscal policy is a dynamic process—what you do today changes what you can and will do tomorrow. Hence, distinguishing between current and future actions is anything but straightforward.

Does the presence of uncertainty about future government policy invalidate generational accounting? Certainly not in theory. Changes in generational accounts are attempts to approximate underlying generation-specific welfare changes arising from policy changes, by which I mean changes in the distribution of future government actions. If we could write down and simulate *the* true intertemporal model of the economy, with all its uncertainties, we could determine precisely the change in each generation's welfare (measured as a wealth-equivalent change in expected utility) arising from a policy change. This would be the change in its generational account arising from the policy. So the real question is not whether uncertainty invalidates generational accounting. The real question is whether generational accounting, as currently conducted, is too crude, with respect to its *ad hoc* method of risk adjustment (which involves discounting future streams at a rate higher than the risk-free rate), to provide a useful approximation to underlying policy-induced, generation-specific welfare changes. This is an important topic for research—one that I am now exploring with Alan Auerbach and Jan Walliser.

Liquidity Constraints and Myopia

Cutler also claims that, for individuals who are liquidity constrained or myopic, the cash flow deficit measure will be the appropriate measure of short-run fiscal policy. At a theoretical level, Hayashi (1987) has shown that the presence of liquidity constraints does not necessarily imply that households are liquidity constrained in response to present-value neutral changes in the timing of their lifetime net taxes. Hayashi's argument is

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

that if agents, including lending agents, are rational, they will adjust their liquidity constraints in response to policies that amount to pure changes in the timing of the government's net tax payments.

But Hayashi's point aside, one need only take a glimpse at the actual economy to know that neither liquidity constraints nor myopia is the predominate determinant of U.S. consumption. Collectively, U.S. households hold over $25 trillion in net wealth—a sum that is about five times annual consumption. This wealth is clearly not being held by people who are, in the main, liquidity constrained nor is it being held by people who think the world is going to end tomorrow. Although it's true that this wealth is highly concentrated among the wealthy, it's also true that the wealthy account for a disproportionate share of aggregate consumption. If one adds to the consumption of the wealthy the consumption of the middle class, who, by and large, are neither myopic nor liquidity constrained (at least with respect to the size of typical net tax changes), one surely arrives at the great bulk of U.S. consumption.

This assessment jibes with most studies of liquidity constraints, which find that roughly 20 percent of households are liquidity constrained. My guess is that such households account for less than five percent of aggregate U.S. consumption. These studies are not, by the way, immune to criticism. Carroll (1997) suggests that most may suffer from a fatal flaw, namely, specification bias that has led economists to interpret their results as evidence of liquidity constraints when they may, instead, simply represent evidence of optimal intertemporal consumption choice under uncertainty. The microstudy testing liquidity-constrained/myopic behavior that I find most impressive and that is not subject to Carroll's criticism is Altonji and Siow (1987). This study finds no evidence of liquidity-constrained or myopic behavior.

In discussing liquidity constraints, Cutler cites Campbell's and Mankiw's (1989) time-series estimate that "about 50 percent of consumption is accounted for by people who are sensitive to current income... ." Campbell and Mankiw's specification is, strictly speaking, only appropriate if all households have quadratic utility. If the households all have some other form of utility function, such as logarithmic, Campbell and Mankim's specification will involve a misspecification error that could be biasing their results. I, for one, do not find aggregate time-series regressions of this type very convincing.

Cutler also cites Hurd (1990) and Carroll and Summers (1991) as constituting evidence against the life cycle model and, consequently, casting doubt on the validity of generational accounting. Again, I don't think generational accounting's validity or utility depends on whether the life cycle model is the only or even the best description of household consumption behavior. But, in any case, I view these two papers as evidence against a simplistic life cycle model devoid of uncertainty. In an uncertain world, we'd expect the elderly to decumulate their nonannuitized wealth slowly as Hurd finds. We'd also expect young workers to adjust their consumption to innovations in their earnings—the tracking of consumption and earnings reported by Carroll and Summers. Indeed, Carroll, himself, does not view their findings as evidence of liquidity constraints.

In considering the "evidence," Cutler concludes that "the life cycle model is not the best description of individual

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

behavior. This, in turn, suggests the value of the cash flow deficit for government accounting." I disagree. In my view, the life cycle model with uncertainties of various kinds (including life-span uncertainty leading to many undesired bequests) *is* the best single model of individual behavior. I also find it rather ironic that Cutler uses liquidity constraints and myopia to defend deficit accounting when the fact that the government has been able to borrow roughly $5 trillion dollars from the public is, itself, strong evidence that much of that public is neither liquidity constrained nor myopic.

But, if we grant that some nontrivial segment of U.S. society is liquidity constrained (even in response to pure changes in the timing of government receipts and expenditures) or myopic, does that make the cash flow deficit a useful policy measure? Which precise policy would the cash flow deficit in this case measure? I don't know.

It seems to me that whether individuals are liquidity constrained or myopic, policy changes affect the welfare of different generations differently, as well as groups within generations. As economists we should want to measure the welfare changes experienced, on average, by members of different generations as well as the distribution of those changes within each generation; i.e., whether there are liquidity constraints and myopic behavior, one would want to do generational accounting as well as intragenerational accounting. Now, admittedly, such accounting becomes more difficult the more complex is the economy and the more heterogeneous are its agents. For liquidity constrained and myopic agents, one would, presumably, want to discount changes in future net taxes more heavily than for nonconstrained, nonmyopic agents. Thus, in forming the accounts of the liquidity constrained and myopic segment of society, short-term net taxes would play a relatively more important role than would be true in forming the accounts of nonconstrained and nonmyopic agents. But such intragenerational accounting is a far cry from cash flow deficit accounting, which ignores the future entirely.

Political Manipulation of Generational Accounts

Cutler says that generational accounting is subject to more "accounting games" than is the deficit. He then proceeds to discuss the possibility of the government lying about its true future policy intentions in order to make its generational accounts look good. I think Cutler is missing something important here as well as touching on something important.

In talking about "the" deficit, Cutler presumes that the reader knows what he is talking about. I, for one, don't. My argument is that the deficit is not a well-defined economic concept and that whatever deficit is being announced by the government reflects a choice of government fiscal labels that is inherently arbitrary and noneconomic. To suggest that "the" deficit is more or less subject to manipulation than something else, is to suggest that there is a right way to measure "the" deficit to begin with. There is no right way; as indicated in Kotlikoff (1993), in any neoclassical model with rational agents, the deficit will be simply a reflection of the government's vocabulary and bear no fundamental relationship to its true fiscal policy. So "the" deficit is, by its very nature, a manipulation. Discussing "the" deficit's manipulation is like discussing whether the tailors in *The Emperor's New Clothes* tricked the

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

emperor by dressing him in the wrong color and ignoring the fact that he was naked to begin with.

Cutler's important point is that the generational accounts can be manipulated by politicians who lie about the likely future course of policy. My colleagues and I have had firsthand experience with this. In preparing generational accounts for the Clinton Administration in 1994, we were instructed to assume that, after the turn of the Century, real federal purchases of goods and services would remain constant forever. This forecast was patently ludicrous because it implied that the federal government would, over time, disappear relative to the size of the economy. Our resistance to using this assumption as well as other factors led certain West Wing "economists" in the Clinton administration to exclude generational accounting from the President's Budget, notwithstanding the objections of the Office of Management and Budget.

To avoid manipulation of forecasts used to produce generational accounts, I have long advocated having an independent agency, such as the General Accounting Office or the Trustees of the Social Security Administration, do generational accounting. In addition, the more academic economists and think tanks who engage in generational accounting, the easier it will be to identify outlandish fiscal projections made for political convenience.

Allocating the Benefits of Government Consumption

As I and my colleagues have acknowledged repeatedly, generational accounting does not allocate to specific generations the benefits of government consumption (including the imputed rent on government infrastructure and other durables). What it does do is help us understand which generation is being made to pay for this consumption. Cutler claims that the right solution to not knowing how to allocate the benefits of government consumption is to divide the government into "capital budgets, current budgets, and budgets for past activity." This sounds like breaking down a generation's account into three parts: one going to the payment of current expenditures, one going to the payment of capital expenditures, and one going to pay off accrued liabilities, both official and unofficial. Although this decomposition has some appeal, I don't see the basis upon which one could actually say how much of each gener-ation's remaining lifetime net tax pay-ments are being spent on this or that.

Conclusions

Reading these two reviews has helped me refine my views on generational accounting. It's also helped me, and I hope others, get a better sense of where research on generational accounting can be most productive at the margin.

ENDNOTES

I thank Alan Auerbach, David Cutler, Peter Diamond, and Jagadeesh Gokhale for very helpful comments.

[1] These countries are Argentina, Australia, Belgium, Brazil, Canada, Denmark, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, Thailand, and the United States. A generational accounting analysis for the United Kingdom is also under way. Results for the 16 countries are presented in Auerbach, Kotlikoff, and Leibfritz (forthcoming).

[2] These include the Argentine Ministry of Planning, the Bank of Japan, the Bank of England, the Office of Management and Budget of the U.S. Government, the New Zealand Treasury, and the Norwegian Ministry of Finance. The generational accounts for Sweden and Thailand were produced by the International Monetary Fund and The World

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Bank. Generational accounting has also been the subject of detailed studies by the Congressional Budget Office, the European Commission, and the Organization for Economic Cooperation and Development.

[3] Incidentally, unpublished calculations by John Sturrock at the Congressional Budget Office (CBO) (discussed by CBO Director June O'Neill in her February 13th testimony to the House Budget Committee) show that a roughly 50 percent federal income tax hike would be needed, given CBO's lastest federal expenditure projections, to achieve 75-year intertemporal budget balance.

[4] The government's imputation method is questionable because it includes depreciation of the stock of durables, but omits foregone interest income on this stock.

[5] Academic work on intragenerational accounting is now under way.

[6] Abel and Kotlikoff (1994) also document the very strong correlation between the increase in cohorts' relative consumption values and the increase in their relative incomes.

[7] See Altonji, Hayashi, and Kotlikoff (1992, 1997) and Hayashi, Altonji, and Kotlikoff (1996).

REFERENCES

Abel, Andrew, and Laurence J. Kotlikoff. "Intergenerational Altruism and the Effectiveness of Fiscal Policy: New Tests Based on Cohort Data." In *Savings and Bequests*, edited by Toshiaki Tachibanaki. Ann Arbor: University of Michigan Press, 1994.

Altonji, Joseph, Fumio Hayashi, and Laurence J. Kotlikoff. "Is the Extended Family Altruistically Linked? Direct Tests Using Micro Data." *American Economic Review* 82 No. 5 (December, 1992): 1177–8.

Altonji, Joseph, Fumio Hayashi, and Laurence J. Kotlikoff. "Parental Altruism and Inter Vivos Transfers: Theory and Evidence." *Journal of Political Economy* (forthcoming, 1997).

Altonji, Joseph, and Aloysious Siow. "Testing the Response of Consumption to Income Changes with (Noisy) Panel Data." *Quarterly Journal of Economics* 102 No. 2 (May, 1987): 293–328.

Auerbach, Alan J., Laurence J. Kotlikoff, and Willi Leibfritz, eds. *Generational Accounting Around the World*. Cambridge, MA: National Bureau of Economic Research, 1998 (forthcoming).

Campbell, John, and Greg Mankiw. "Consumption, Income, and Interest Rates: Reinterpreting the Time Series Evidence." In *NBER Macroeconomic Annual*, edited by Olivier Jean Blanchard and Stanley Fischer, 195–216. Chicago: University of Chicago Press, 1989.

Carroll, Christopher. "Buffer Stock Saving and the Life Cycle/Permanent Income Hypothesis." *Quarterly Journal of Economics* 112 No. 1 (February, 1997): 1–55.

Carroll, Christopher, and Lawrence H. Summers. "Consumption Growth Parallels Income Growth: Some New Evidence." In *National Saving and Economic Performance*, edited by B. Douglas Bernheim and John Shoven, 305–43. Chicago: University of Chicago Press, 1991.

Cutler, David. "Review of Generational Accounting: Knowing Who Pays, and When, for What We Spend." *National Tax Journal* 46 No. 1 (March, 1993): 61–7.

Diamond, Peter. "Generational Accounts and Generational Balance: An Assessment." *National Tax Journal* 49 No. 4 (December, 1996): 597–607.

Fehr, Hans, and Laurence J. Kotlikoff. "Generational Accounting in General Equilibrium." *FinanzArchiv* 53 No. 1 (1996–1997): 1–27.

Gokhale, Jagadeesh, Laurence J. Kotlikoff, and John Sabelhaus. "Understanding the Postwar Decline in United States Saving: A Cohort Analysis." *Brookings Papers on Economic Activity 1* (1996): 315–90.

Hayashi, Fumio. "Tests for Liquidity Constraints: A Critical Survey and Some New Observations." In *Advances in Econometrics: Fifth World Congress*, Vol. 2, edited by F. Truman Brewley. New York: Cambridge University Press, 1987.

Hayashi, Fumio, Joseph Altonji, and Laurence J. Kotlikoff. "Risk-Sharing Between and Within Families." *Econometrica* 64 No. 2 (March, 1996): 261–94.

Kotlikoff, Laurence J. *Generational Accounting*. New York: The Free Press, 1992.

Kotlikoff, Laurence J. "From Deficit Delusion to the Fiscal Balance Rule—Looking for a Sensible Way to Measure Fiscal Policy." *The Journal of Economics*. (Seventh Supplement 1993): 17–41.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.