

A critical assessment of generational accounting and its contribution to the generational equity debate

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Abstract

This article describes generational accounting (GA) with a focus on what it brings to the broader literature on generational equity. Our assessment suggests that the GA model has its limitations but is potentially useful in the hands of analysts who are familiar with both the strengths and limitations of the model. It is most useful when the focus is on dealing with intergenerational equity, but it is much less useful when the focus is on issues related to class, race, and other forms intragenerational equity. We conclude that when GA models are used to support calls for retrenchment of public spending on pensions and other social programs that target the older population, it makes sense to recognize that the potential benefits with respect to government debt and deficit reduction and reduced inequality in net tax burdens across age cohorts may come at the cost of increased intragenerational inequality for many workers and retirees.

Keywords: generational accounting, intergenerational equity, Social Security, pension policy, inequality.

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Introduction

What has come to be called “generational accounting” makes use of an economic forecasting model developed by Laurence Kotlikoff and his colleagues (Kotlikoff 1992; Auerbach et al. 1991a; Auerbach et al. 1994; Gokhale et al. 2000). The model is often used in the USA to project how transfers and tax burdens will be distributed across generations, or more precisely age cohorts, decades into the future. The primary goal of this article is to provide a brief nontechnical overview of the generational accounting (GA) model suitable for noneconomists. We summarize the model itself, including the rationale for why it was created, and discuss some of its applications in the USA and other countries around the world. We also explore the link between this model and the broader debate in recent decades over generational equity.

Research making use of the GA concept and model can be viewed as part of the broader literature on “generational equity” because GA is often used to evaluate the generational fairness of proposed changes to government tax and spending policies, particularly those dealing with spending on public pensions and health care. For example, GA has made headlines in the USA because it appears to provide an objective and scientific model that produces forecasts that can be used to support calls for large cuts in social programs such as Social Security (the public pension system in the USA) and Medicare (the national health insurance program for elders in the USA). GA was originally developed by economists in the USA, but it has been adapted to and applied in many other countries. For this reason, it is a tool worth critically examining for both its strengths and limitations in connection with broader discussions of generational equity and burden sharing taking place in the USA and across the globe.

The Generational Equity Debate

What has come to be referred to as the “generational equity debate” was starting to emerge in the USA during the early 1970s in connection with the concern among some commentators about the “graying of the federal budget” (Hudson 1978). *Washington Post* commentator David Broder (1973: A16) wrote, “... America’s public resources are increasingly being mortgaged for the use of a single group within our country: the elderly.”

But the term generational equity was not explicitly used until the 1980s, when the Social Security program in the USA was facing a short-term funding crisis (for the second time in less than ten years). Immediate steps were needed to bring both short-term and long-term spending on the program into alignment. A bipartisan commission chaired by Alan Greenspan (the so-called Greenspan Commission) was established and its recommendations, calling for a number of major changes, were incorporated into the Social Security Amendments of 1983. These reforms solved the immediate funding crisis and began to address the long-run funding problem as well; but soon thereafter it became clear that, when looking 75 years into the future, the projected costs of Social Security would exceed the projected revenues unless further changes were made.

The “generational equity debate” has persisted well beyond discussions of the 1983 Social Security Amendments. It has been a long-running, ideologically charged dialog between social welfare liberals and conservatives in the USA. In this debate, those on the right, such as Phillip Longman (1987), generally refer to themselves as proponents of “generational equity” and “generational justice.” In contrast, those on the left generally refer to themselves as proponents of “intra-generational equity” and “generational interdependence.” Although the focus of this debate in the popular media continues to be whether or not to make major cuts in spending on Social Security and Medicare, the debate has expanded to cover a broad range of government-supported programs for the older population, including Medicaid, age-based subsidized housing, age-based tax benefits, and many other programs and policies that in one way or another are viewed as disproportionately favoring elders (typically those aged 65 and more) (Kingson et al. 1986; Longman 1985).

For the highly politicized issue of Social Security, the claim by those on the right is that it will not be possible to pay future retirees pensions and other benefits that are as generous as those being paid to current retirees. In particular, as the boomers begin to retire, those on the right argue that it will not be possible for the much smaller generation that follows (the baby bust generation) to finance Social Security and other old-age entitlement programs at the level of generosity enjoyed by current (largely preboomer generation) retirees (Peterson 1996). Initially, the proposal from the right was to cut promised benefits to future Social Security retirees (Longman

1987). Subsequently, the call was to help close the gap using reforms that would partially privatize the Social Security program (Beard 1996; Ferrara 1995). Those on the right argue that: (1) Social Security as currently structured is unsustainable and for that reason unfair and (2) their proposed reforms would promote greater equity in the sense of reducing projected long-term differences in tax and benefit levels between generations (Williamson & Watts-Roy 2009).

While analysts and commentators on the right have emphasized the importance of equity across generations (Lamm 1989; Longman 1987), their critics on the left have called for a different and more inclusive use of the term "equity," one that emphasizes various forms of intragenerational equity in the sense of "fairness" consistent with a Rawlsian sense of justice (Kingson 2007). Since the early 1980s, the goals of those on the left have been largely defensive as they have sought to block reforms that would increase intracohort income inequality within older cohorts. Those on the left seem to be more concerned with the fairness of current high levels of inequality within generations (and age cohorts), that is, intragenerational inequality, than they are with efforts to reduce inequality in tax burdens between generations (Williamson et al. 1999).

Although the generational equity debate began in the USA, the debate has emerged in many other countries as well (Sabbagh & Vanhuysse 2010). In the 1990s, Canadians began to have political debates similar to those in the USA (Foot & Venne 2005; Gray 1997). Debates also emerged in Australia, focusing on generational equity issues in connection with the increasing costs of pensions and health care (Coombs & Dollery 2002). This increased focus and debate surrounding issues of intergenerational equity also led the Australian government to produce several reports on intergenerational issues. Similar reports or government analysis of issues related to intergenerational equity have been produced in several other countries during the early 2000s such as the UK, New Zealand, Canada, and the USA (Coombs & Dollery 2002). Continental European countries have also begun to debate such issues as the long-term financing pensions and other old-age social programs in generational equity terms (Kohli 2008). There is every reason to believe that the current concern over high levels of national debt in many European nations will eventually be reflected in debates that call for increased attention to generational equity.

One example of the extension of the debate in Europe is through the formation of groups focused explicitly on issues of intergenerational equity such as the Foundation for the Rights of Future Generations. This organization was founded in Germany in 1996 as a think tank and advocacy institute focusing on issues of intergenerational justice and sustainability (FRFG 2011). There are similar groups in the UK and Italy (Inter-generational Foundation 2011; What If 2011). There are also groups starting to open offices in multiple regions to pursue goals of intergenerational equity such as the World Future Council (WFC) that is based in Hamburg with offices in Brussels, London, Washington, and Johannesburg. The mission of the WFC is “to be an ethical voice for the needs and rights of future life” (WFC 2007). These groups also reflect the expanding nature of the generational equity debate as they are generally focused on a broader set of issues that go beyond pensions and health care. For example, the Inter-generational Foundation based in the UK lists projects covering issues such as the environment, education, public debt, housing, taxation, employment, and population (Inter-generational Foundation 2011).

What is GA?

The GA model compares tax burdens by calculating account balances in present value for each age cohort, assuming the continuation of current tax and transfer policies combined with projections of several other variables such as population, government wealth, government expenditures, and a discount rate (Auerbach & Kotlikoff 1999). The account balances that are generated reflect each age cohort’s projected lifetime net tax payment, that is, projected lifetime tax payments, less lifetime transfers calculated forward from a specified base year. This value is calculated based on an intertemporal budget constraint which assumes that government wealth plus tax receipts will be able to cover the cost of future consumption. This does not mean that all the debt must be paid off but rather that the debt will simply be serviced through payments made by current and future generations (Auerbach et al. 1994). The accounts are estimated for an average member of each age cohort and are intended to be calculated separately for men and women. The literature sometimes does have

separate calculations by gender (Auerbach et al. 1994) but this is rare. Similarly, the accounts are not generally calculated separately across other demographic categories.

The most common way of modeling generational accounts is to calculate account balances for each generation forward from a chosen base year (see Table 1). Because these accounts do not include past taxes and transfers, it is inappropriate to compare the accounts of a cohort at age 20 with those of a cohort at age 65. The cohorts that can most appropriately be compared are newborns in the base year and future

Table 1. Generational accounts for males in the USA, 1991 (*present values in thousands of dollars*)

Generation's age in 1991	Net payments	Tax payments	Transfer receipts
0	78.9	99.3	20.4
5	99.7	133.2	33.5
10	125.0	155.3	30.3
15	157.2	195.0	37.8
20	187.1	229.6	42.5
25	204.0	251.9	47.9
30	205.5	258.5	53.0
35	198.8	259.1	60.3
40	180.1	250.0	69.9
45	145.1	227.2	82.1
50	97.2	193.8	96.6
55	38.9	153.1	114.2
60	- 23.0	112.1	135.1
65	- 74.0	76.8	150.8
70	- 80.7	56.3	137.0
75	- 75.5	41.5	117.0
80	- 61.1	30.2	91.3
85	- 47.2	23.2	70.4
90	- 3.5	8.8	12.3

Source: Adapted from (Auerbach, Gokhale & Kotlikoff 1994: 80, Table 1).

Note: A negative number indicates that the average member of this cohort is projected to receive a cumulative total of more in transfers than he pays in taxes looking forward from this year (1991) until death. These calculations do not factor in any taxes paid or transfer payments received in prior years.

age cohorts because for these age cohorts, the account balances represent projections from birth to death; there are no past tax or transfer payments excluded from any of the account balances for these cohorts (Auerbach et al. 1994). There is another method that calculates retrospective lifetime generational accounts forward from birth rather than a specified base year. For example, see Table 3 in Auerbach et al. (1994: 86). Because this second method is rarely used, we will focus on generational accounts calculated forward from a base year.

Generational accounts indicate what each age cohort can expect in terms of net taxes from that year forward. Proponents of GA then argue that these account values can be used to make projections about how the size of the lifetime net tax burden for each generation (age cohort) will change based on the adoption of various changes in tax and transfer policies (Auerbach et al. 1991a; Feist 2003). The policy changes can be included in the model, and the difference in the resulting account balance for each age cohort provides an indication of the effect of this policy change.

GA was initially developed in the USA largely as an alternative to the use of the annual deficit calculation as the primary summary measure of the fiscal state of the nation (Auerbach et al. 1991a). Proponents of GA frequently refer to the use of the conventional annual deficit statistic as “deficit accounting” and they developed “generational accounting” as a response to the flaws they argue are present in deficit accounting (Kotlikoff & Raffelhüschen 1999). Since its initial formulation in the USA, the GA model has been applied in many other countries such as France, Germany, and Belgium, among others, that face issues similar to those in the USA with respect to the calculation of the national debt and the annual deficit (Kotlikoff & Raffelhüschen 1999). Recently, the GA model and framework have been used in several other countries, including the UK (McCarthy et al. 2011), Austria (Deeg et al. 2009), Hungary (Gál & Tarcali 2008), and Australia (Bessant et al. 2011).

To understand why the GA model was introduced, it is informative to consider some of the reasons that proponents of GA are dissatisfied with “deficit accounting”: (1) there is a lack of consensus about how to compute the deficit and this leaves it open to political manipulation; (2) it may lead to an estimate that misrepresents the true fiscal state of the country; and (3) it fails to adequately demonstrate the variation in burdens among different

generations (Auerbach et al. 1994). The first criticism is, in essence, that the national debt and annual deficit “are accounting constructs whose values are entirely dependent on the choice of fiscal vocabulary” (Kotlikoff & Raffelhüschen 1999: 162). For example, Social Security receipts and payments can be labeled “taxes” and “transfers” or “loans” and “return of principle and interest” on these loans (Auerbach et al. 1994). Depending on the vocabulary used, two different values for the deficit would be calculated, and these differences would carry over into the projected changes in the debt and deficit over time (Auerbach et al. 1991a). Proponents of GA hold that their model overcomes these difficulties by remaining “invariant to changes in accounting labels” (Auerbach et al. 1991a: 2), meaning that their model will calculate the same account balances regardless of the accounting labels used, leaving GA less open to political manipulation than deficit accounting and therefore, arguably, making it a more reliable fiscal measure.

A second criticism made by proponents of GA is that the potential for manipulation in “deficit accounting” has resulted in misleading accounts of the actual fiscal status of the USA (Kotlikoff & Burns 2004). These analysts see this misrepresentation as stemming largely from the manipulation of how “unfunded liabilities” are taken into account. For example, the USA has often excluded Social Security liabilities from the budget calculation when it was running a deficit but included them when it was running a surplus (Kotlikoff & Raffelhüschen 1999). Proponents of GA argue that their model is more accurate because it includes the unfunded liabilities associated with programs such as Social Security and Medicare by treating them as taxes and transfers when net lifetime burdens are calculated so that the full extent of the liability is evident in the GA account balances. GA is thus seen as an alternative method for demonstrating the fiscal state of a country that provides a more accurate representation of the true liabilities, and therefore the true burdens facing each generation.

A third criticism made by proponents of GA is that deficit accounting fails to sufficiently reflect differences in generational burdens because “policies that change the pattern of generational burdens need not affect the deficit, while other policies may change the deficit without affecting the pattern of generational burdens” (Auerbach et al. 1991b: 9). According to proponents of GA, this inability to reflect different generational burdens

is particularly problematic because the burdens on young and future generations are higher than those faced by their older counterparts in most countries and are, in many cases, increasing as the ever expanding older population begins to collect pension benefits. GA is supported by many as a way to evaluate the generational equity of current government policies and proposed reforms. When using the term “generational equity,” most proponents of GA focus on the argument that “generations born in the future should not pay a higher share of their lifetime incomes to the government than today’s newborns” (Auerbach et al. 1994: 84). Although it is acknowledged that there are many ways of achieving this goal through altering tax and transfer policies, most frequently it is cuts in government social spending programs such as Social Security and Medicare that are suggested by proponents of GA (Kotlikoff 1996; Kotlikoff & Burns 2004).

The need for policy reform is often underscored by proponents of GA through a rhetoric of crisis. Gokhale and Kotlikoff (2001) titled one article: “Is War Between the Generations Inevitable?” while Kotlikoff and Burns (2004) titled their book: “The Coming Generational Storm.” Language such as this is used to emphasize the need to make deep cuts in spending on Social Security and other social programs. However, this “crisis” is not present in all countries, not even all Organisation for Economic Co-operation and Development (OECD) countries. For example, Canada does not have fiscal policies that, according to relatively recent GA projections, will lead to an imbalance in the lifetime net tax payment between current and future age cohorts (Kotlikoff & Raffelhüschen 1999). Some countries, such as New Zealand and Thailand, have the opposite problem, as projections suggest that they are creating a greater net tax burden for current rather than future generations (Kotlikoff & Raffelhüschen 1999).

The language of crisis used in much GA writing focuses on countries such as the USA, Austria, Finland, Germany, and Italy, in which projections suggest that population aging will be placing an increasingly large strain on the young adult age cohorts and future generations (Raffelhüschen 1999). These younger taxpayers will have to pay for the generous promises being made to the older generations under current policy (Kotlikoff 1996). Kotlikoff saw the strain of a growing tax burden on

young and future generations in the USA as stemming largely from the projected growth in Social Security and Medicare payments due in part to the graying of the nation's age structure. Buchanan (2005) pointed out that in the USA, the ratio of workers to retirees was about 3.3 during the 1970s, but projections show that by 2020 the ratio will drop to 2.6 and not level off until it reaches 1.9 in 2065.

Proponents of GA in the USA generally call for changes in programs such as Social Security and Medicare to bring about greater intergenerational equity. For example, writing in *Fortune*, Robert Norton (1995) pointed to Medicare and Medicaid as the largest offenders with respect to the imbalance in generational burdens. To emphasize this point, he cited Kotlikoff as saying that "we need to pay more and spend less today so our kids won't be taxed to death" (Norton 1995: 33). But the strident nature of the language used to articulate these arguments does not necessarily make them valid. Buchanan (2005) argued that although the worker to retiree ratio seems dire, this ratio is only part of the story; we must also consider growth in worker productivity that can offset much of the impact of a declining worker to retiree ratio. Although there is some demographic and economic grounding for the arguments made by proponents of GA, not everyone accepts their projections, or the policies they are advocating based on those projections.

A Critical Assessment of GA

We have already discussed some of the perceived benefits of GA, especially those suggested by its proponents. However, GA is not without its critics (Buchanan 2005; Cutler 1993; Diamond 1996; Haveman 1994), most of whom argue that the GA model, like other economic forecasting models, is based on assumptions that may, in hindsight, prove quite inaccurate. With long-term projections, small errors in the parameters can lead to huge discrepancies between projected and actual outcomes (Buchanan 2005). GA draws explicit attention to differences in burdens facing various generations, an issue viewed as important by many. The combination of the importance of generational equity with concerns over the shortcomings of GA has led some critics of GA to argue that this method should not replace the deficit but should instead be used in conjunction with it, and

other fiscal indicators (Cutler 1993; Haveman 1994). Other critics go further, arguing that GA is itself so flawed that it should not be used at all for this purpose (Buchanan 2005).

Criticisms of the GA model take several forms; some focus on the assumptions underpinning the model or factors left out of the model, whereas others focus on the ways in which the model has been applied. Due to space limitations, we cannot deal with the full range of criticisms that have been made (see cited sources for additional criticisms), instead we shall group critical assessments of the model into two categories: (1) those with specifically economic focus that may be of more relevance to economists and (2) criticisms that will be of greater interest to sociologists and other noneconomists. This second category links more directly to issues within the generational equity and burden-sharing debates.

Economic Criticisms

We have chosen to focus on three economic criticisms of particular interest: (1) the assumptions of the life cycle model used in GA; (2) the selection of a discount rate; and (3) the way taxes are measured and incorporated into the model.

According to Buiter (1997: 624), utility of generational accounts model “lives or dies with the life-cycle model of consumption.” The model holds that individuals will “smooth” their consumption over their lifetime based on expectations about their lifetime earnings. The assumption is that people will borrow early in life, save during their working years, and then largely live off of their savings during retirement (Browning & Crossley 2001). However, many older people do not spend their money in a way that makes their lifetime spending “smooth,” with many, especially those with higher incomes during their working years, ending up with a substantial stock of wealth at the end of their lives. Although the life cycle model assumed by GA can account in some ways for these accidental bequests occurring when a person over saves and ends up with a stock of wealth, there are other forms of intergenerational transfers that are not sufficiently accounted for within the model such as intended bequests and transfers that happen earlier during one’s lifetime, rather than at the end of one’s life (Angel & Mudrazija 2011).

Proponents of the GA model argue that private bequests are nonessential to the GA framework because the model focuses on the government distribution of burdens and benefits to the different generations (Auerbach et al. 1991a). However, intentions to provide bequests or other intergenerational transfers during one's lifetime interact with public taxes and transfers. People adjust their economic choices according to public policies. Some argue that public transfers effectively serve as replacements for private transfers, whereas others argue that public transfers serve to create more intrafamilial transfers (Angel & Mudrazija 2011). Either way, the argument that private transfers are external to the GA model is not an adequate explanation. Sebald and de Neubourg (2003: 2) argued that in the UK if private intergenerational transfers within families are taken into consideration, future generations are left with not only the burden of paying for these current expenditures being financed with increases in the national debt but also with a considerable stock of wealth from these transfers within families. This points to a more general problem with the GA model in that it fails to adequately incorporate intergenerational income mobility (Lee & Solon 2009).

A second assumption implicit in the life cycle model is that at any given time future fiscal policy, future income, and future interest rates will shape people's consumption patterns just as current fiscal policy, income, and interest rates do (Wilcox 1989). Cutler (1993) criticized this assumption, arguing that individuals may have insufficient foresight to allow them to accurately assess the consequences of current fiscal policies for future taxes and related benefits. People frequently change their consumption patterns in response to changes in their personal economic situation (Wilcox 1989); this runs counter to the life cycle assumption that people will only make small changes to smooth their consumption based on their expected lifetime financial earnings (Cutler 1993). In fact, many households organize their budgets annually as opposed to managing their financial plans based on their lifetime earnings expectations. The fact that many people choose not to "substitute lifetime household accounts for annual budgets indicates that at least some of the presumptions of the life-cycle framework – like foresightedness . . . are violated. And to the extent that they are violated, annual deficits will matter" (Haveman 1994: 108). This is one of the criticisms that has led many analysts to argue that GA should

not replace the use of the annual deficit but might instead be used in combination with the annual deficit and other fiscal measures (Cutler 1993; Haveman 1994).

A 1995 study by the Congressional Budget Office assessing the GA model noted that ambiguity concerning the proper discount rate is another major problem with the model. The discount rate is an interest rate used to calculate the present value of future consumption, income, transfers, and taxes.¹ Since all of the accounts are calculated in present values, the discount rate is an especially important aspect of the model because the factors included in the model are all converted to present values using the chosen discount rate (Haveman 1994). Generally, a discount rate of 5% or 6% is used in the GA model, “which is roughly halfway between the real historical returns on government bonds and private sector capital” (Auerbach et al. 1994: 78). Haveman (1994) argued that this rate is a somewhat arbitrary selection that falls below the rates typically associated with individuals who would have invested the money and above the rates associated with individuals who would have used the money for more immediate consumption.

The somewhat arbitrary nature of the selected discount is particularly problematic because even small differences in the size of the discount rate selected can have a major impact on the projected burden of current spending on future generations (Congressional Budget Office 1995). Haveman (1994) emphasized the importance of the size of the discount rate by pointing out that the difference between the expected lifetime net tax payments for newborns and future generations is lowered by approximately 22%, if a 3% discount rate is used rather than 6%. Thus, using an appropriate discount rate is a necessity if the accounts are to accurately reflect generational burdens.

Another important critique discusses the way in which taxes are measured and incorporated into the GA model. Tax measurement is

¹ For example, if the discount rate is 5 percent then the present value of \$100 in transfer income to be received 1 year from today is $\$100/1.05$, which is \$95.24, and the same \$100 transfer to be received 10 years from today would be $\$100/(1.05)^{10}$, which is \$61.35. For a more detailed critical assessment of the use of discount rates in GA see Haveman (1994).

affected by the issue of incidence that Haveman (1994) raised with regard to how benefits and burdens are attributed to specific generations. Incidence refers to how taxes and transfers affect specific individuals; generally we understand that the individuals affected are the ones who receive, or pay, the cash value of these transfers and taxes. GA maintains this general assumption by associating government transfers and taxes with the individuals to whom they are distributed (Congressional Budget Office 1995). However, this assumption may not hold true in all cases (Feist 2003). For example, it may be that Medicare benefits should, at least in part, be calculated as transfers to the grown children of the elderly who technically receive the transfer because otherwise these children might have to pay for the medical expenses of their parents (Haveman 1994). Reassigning transfer benefits in this way may have dramatic effects on the overall generational accounts by lowering the account balances for younger generations. If this were the case, the difference between young and future generations would be less dramatic, and achieving tax burden sustainability would require less drastic changes in policy. Thus, the economic underpinnings of the model operate on certain assumptions that must hold with a great deal of precision in order for the long-term projections of generational account balances to accurately reflect the nation's fiscal state.

Broader Criticisms

Among the omissions associated with the current versions of GA, one that is of particular concern is the failure to incorporate the potential benefits of government spending in a number of areas such as research and infrastructure (Helliwell 1998). One example is the lack of an easily quantifiable, and at least moderately precise, measure of the benefits of government spending on scientific research. Often the benefits of such research do not become evident for decades after the original expenditure, making it difficult to separate these benefits from spending on similar projects in the years before and after the spending during a specified year. But if the expenditure is to be included, as it should be, there must also be an effort to incorporate the benefits into our assessment of the value of the program and the benefits received by different generations.

Some government spending on infrastructure improvements provides more tangible, monetarily measurable benefits, but again these benefits are excluded from GA (Helliwell 1998). For example, when generational accounts are calculated for Japan, future generations are shown to bear a huge burden, compared to current generations; but the exclusion of factors such as the future benefits of government-fixed capital formation leads to an underestimation of the benefits for future generations in Japan and to an overestimation of the lifetime net tax burdens (Takayama et al. 1999).

A similar argument can be made with a number of other government expenditures that have not been incorporated into GA models. In many cases, the benefits are hard to assess with any precision and for that reason no effort had been made to assess either the associated short- or long-term benefits. Examples include expenditures on programs designed to reduce the level of environmental degradation or rate of global warming (Helliwell 1998). These environmental issues have received ever increasing attention in recent years, and it is safe to assume that they have important intergenerational consequences; but they are not included in large part because it is not currently possible to put a specific dollar value on the benefits in general, let alone broken down by age cohort. Part of the reason that we need to find a way to factor in environmental damage is that in many cases the consequences are irreversible; for example, an extinct species cannot be brought back, but a drop in a reduction in a nation's GDP can often be "corrected" for future generations (Buchanan 2011).

Environmental concerns are reflected in the various groups that are working towards intergenerational justice. In the UK, the Inter-generational Foundation writes that "environmental degradation is our inter-generational legacy: future generations will have to pay for the profligacy of current generations – indeed their very survival could be at stake" (Inter-generational Foundation 2011). Although the language may be dire, the point is clear: environmental considerations are an important component of intergenerational equity and they are insufficiently accounted for in GA models.

Another consideration generally excluded from GA is the issue of intragenerational equity. Within each age cohort, there is a great deal of variation with respect to burdens and benefits across demographic categories defined by income, race, and gender. Combinations of these

variables define segments of the population that vary with respect to vulnerability and the extent to which they stand to benefit or to be burdened by policy changes designed to help equalize net lifetime tax burdens among age cohorts. Auerbach et al. (1994) recognized that at least one dimension of intragenerational equity, namely gender, should be taken into account. In some of their modeling, they calculated different account balances for men and women, taking into consideration the differences in lifetime earnings and life expectancies (Auerbach et al. 1994). However, separate accounts for men and women are actually very rarely presented and thus even this component of intragenerational equity is generally ignored.

Efforts to come up with a sustainable structure for Social Security by equalizing the “lifetime” net tax burden for the average member of each generation could well exacerbate existing intracohort inequalities between the affluent and poor, between men and women, between Whites and people of color, between those living alone and those living with a spouse, as well as between the young-old and the old-old. The omission of intragenerational equity has political ramifications for the application of GA in the generational equity debate because a more singular emphasis on intergenerational equity favors those on the political right who emphasize intergenerational equity over intragenerational equity.

The Politics of GA and Generational Equity

The generational equity debate is largely an ideological contest between those on the right, who suggest that we should focus on the pursuit of greater equity between age cohorts (intergenerational equity), and those on the left, who oppose policies designed to privilege this one form of equity relative to other forms, specifically intragenerational equity based on factors such as class, race, and gender. Proponents of greater intragenerational equity also tend to be proponents of “generational interdependence,” a reference to the extent to which age cohorts and generations currently are, and should continue to be, interdependent both at the micro (family) level and at the macro (societal) level (Williamson & Watts-Roy 2009).

The focus on intergenerational equity and the related issue of intergenerational conflict is viewed by some as an effort to shift attention away from the class inequality addressed by proponents of intragenerational equity. Martin Kohli (2011) argued that the chance of anything like “war between the generations” emerging any time soon is unlikely, but he discussed the possibility of future generational conflict emerging in response to rapidly increasing income inequality in the context of welfare state (social security) retrenchment.

Although the generational equity debate now includes a wider range of issues, including the environment, sustainable development, and global warming (Attfield 2010), at its core the generational equity debate revolves around the fairness of pension systems and other old-age entitlement programs. The debate rests upon these issues because many argue that it is only through the adjustment of these programs that a just distribution of resources and burdens can be achieved (Kohli 2008).

The GA model, within the context of the generational equity debate, serves as a tool to provide a baseline account of the current state of intergenerational equity. However, due to its emphasis on intergenerational equity and its almost complete omission of issues of intragenerational equity, it appears to be a tool most useful to those on the right. In fact, this particular economic forecasting model did enter the public discourse largely through the popular media in which it was presented as a scientific tool that could be used to determine, with some precision, the state of intergenerational equity in any given country. Generally, these articles called for changes to social spending policies that were supported by those on the right. John Ablett wrote about GA in an Australian newspaper saying “generational accounting provides a practical means of judging the inter-generational redistribution implied by particular fiscal policies” (Ablett 1996: 21). Motoshige Itoh discussed GA within the context of Japan in *The Daily Yomiuri* mentioning the book by Kotlikoff and Burns (2004) projecting a particularly gloomy future for Japan if fiscal policy changes are not adopted (Itoh 2005: 10). In an op-ed piece in the *Washington Times*, James Lucier argued that GA should be included in all fiscal decisions made by Congress because “it answers the question of whether one gets what one pays for in generational income transfer programs”, and the generational accounts of the day indicated that

“today’s elderly will do well in Generational Accounting terms . . . [but] a fiscal apocalypse truly awaits today’s baby” (Lucier 1997: A13).

From its inception in the 1990s through today, GA has been part of political and scholarly debates over generational equity. This attention to GA continues (McCarthy et al. 2011; Prušvic & Pavlokova 2010), even as newer alternatives, such as computable general equilibrium models, have emerged. See Börstinghaus and Hirte (2001) for a comparison of GA and a computable general equilibrium. Perhaps one reason for the persistence of GA as a method for examining intergenerational equity is that the proponents of the model were particularly adept at addressing popular and academic audiences simultaneously. For example, in the early 1990s, the focus of the generational equity debate morphed into the debate over the proposed partial privatization of Social Security (Marmor et al. 1999). Kotlikoff and Burns (2004), two proponents of GA, supported calls for the partial privatization of Social Security in the USA. Their well-written trade book accessible to the general educated public, *The Coming Generational Storm*, made the case for partial privatization based in part on GA projections. Their proposal for partial privatization coincided with a larger conservative push for that type of reform within the generational equity literature (Longman 1987; Peterson 1996). This created a connection between proponents of GA and the conservative politicians as well as scholars, proposing deep cuts in old-age entitlement programs as a way to achieve greater generational equity.

Kotlikoff and Burns (2004) argued that the partial privatization of Social Security and cuts in the Medicare system are urgently needed due to population aging and the associated increase in the number of people who will be receiving transfers from these programs in the decades ahead. Current policy is viewed, by proponents of GA and proponents of generational equity more generally, as taking money from the young to pay for the promises made to older generations (Kotlikoff 1996; Norton 1995). Gokhale and Kotlikoff (2001: 3) refer to this as “borrowing money from our grandchildren and their children without their consent,” and they propose GA as a method to obtain a realistic picture of the relative burdens likely to be placed on different generations in the absence of changes in current fiscal policy.

Calls for changes to Social Security policy, based on GA, can be criticized on the grounds that the GA model only takes into consideration a limited number of variables. Perhaps the most important issue for liberal scholars and politicians involved in the generational equity debate is that the intragenerational implications of the reforms being proposed are all but ignored in the GA model. The current Social Security system is progressive, redistributing wealth to lower income workers, but as Kingson and Williamson (1999) point out, the partial privatization of Social Security would remove much of this progressive redistribution. Even Kotlikoff (1996) acknowledged that partial privatization “might” lead to a decrease in intragenerational equity, but the current GA models only attempt to measure intergenerational equity for average members of each age cohort (Auerbach et al. 1994). By limiting the account balances to only reflect the impact of policy changes on an average member of each age cohort, the model’s ability to demonstrate the effect of these policy changes on intragenerational equity is essentially eliminated. Generational accounting will continue to be viewed by some as a valuable tool for examining issues within the generational equity debate, but others will also continue to criticize it for its focus on too narrow a view of equity.

Conclusion

In the years ahead, the generational equity debate in the USA, Europe, and other countries across the globe is likely to continue to involve economic forecasting models along the lines of the GA model that we have analyzed in this article. These models can provide both baseline measures of a country’s fiscal outlook in regards to intergenerational equity and projections of the impact on intergenerational equity of proposed changes in social spending programs. The GA model is potentially useful to analysts who are thoroughly familiar with the limits of the model, including the unavoidable uncertainty of long-term projections based on crude parameter estimates. Our analysis suggests that GA models should be used with considerable caution for many reasons, including the almost exclusive focus on intergenerational equity to the exclusion of intragenerational equity. When the GA model is used to support calls for major cuts in spending on the entitlement programs, we must recognize that the

proposed cuts generally fail to acknowledge the potentially adverse intragenerational consequences for many workers and retirees being made in the name of “reducing the size of government.”

One of the reasons that the GA model has received so much attention is that Laurence Kotlikoff and his associates had put considerable effort into writing books and articles for a general audience with engaging titles like, the “Coming Generational Storm” and “Is War Between the Generations Inevitable?” The GA model has primarily been used by analysts on the right seeking to use the rhetoric of generational equity in connection with efforts to promote cuts in spending on social security and other welfare state programs. Although scholars, politicians, and citizens may argue the pros and cons of GA as a tool in public policymaking, it is clear that the underlying message embodied in the model – namely that the inter-generational distribution of resources needs to be considered when setting fiscal policy – does deserve attention.

The generational equity debate will be with us for years to come in the USA and in many other countries around the world due to population aging and the associated pressures to increase public spending on public pensions, health care, and other social programs that focus on meeting the needs of elders. Beyond these issues, the debate has in recent years been extended into other realms such as the environment and sustainable development. As it continues to evolve to include new issues, the models used to evaluate generational equity will need to evolve as well. Each nation will need to address these issues in terms of its own set of national contextual factors. Future generational equity debates will often need to include discussions about intergenerational equity, intragenerational equity, private intergenerational transfers, and the long-term benefits of government spending on research, national parks, and infrastructure. To this end, they will need approaches to public policy decision making that are more inclusive than are current variants of GA. For more informed decision making, policy makers will need broader models and more types of information, both qualitative and quantitative, than are currently incorporated into GA models.

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