

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Generational Accounting around the World

Volume Author/Editor: Alan J. Auerbach, Laurence J. Kotlikoff and Willi Leibfritz, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-03213-2

Volume URL: <http://www.nber.org/books/auer99-1>

Publication Date: January 1999

Chapter Title: Introduction to "Generational Accounting around the World"

Chapter Author: Alan J. Auerbach, Laurence J. Kotlikoff, Willi Leibfritz

Chapter URL: <http://www.nber.org/chapters/c6682>

Chapter pages in book: (p. 1 - 8)

Introduction

Alan J. Auerbach, Laurence J. Kotlikoff,
and Willi Leibfritz

Generational accounting is a method of long-term fiscal analysis and planning (see Auerbach, Gokhale, and Kotlikoff 1991; Kotlikoff 1992). Its goals are to assess the sustainability of fiscal policy and to measure the fiscal burdens facing current and future generations. Although generational accounting is only eight years old, there are now 22 countries around the world doing generational accounting: Argentina, Austria, Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Thailand, the United Kingdom, and the United States. Chile, Israel, and Mexico may soon be added to this list.

Much of this generational accounting has been done by or in conjunction with governmental bodies including the Argentine Ministry of Planning; the Bank of England, the Bank of Japan; the Board of Governors of the Federal Reserve System, the Congressional Budget Office, and the Office of Management and Budget of the U.S. Government; the New Zealand Treasury; and the Norwegian Ministry of Finance. The International Monetary Fund (IMF) has constructed generational accounts for France and Sweden. The World Bank has constructed generational accounts for Thailand and is about to begin constructing generational accounts for Slovenia. In addition, the Congressional Budget Office, the European Commission, and the Organization for Economic Cooperation and Development (OECD) have each produced detailed studies of generational accounting (see Sturrock 1995; Leibfritz et al. 1995; Raffelhüschen 1997).

Alan J. Auerbach is the Robert D. Burch Professor of Economics and Law at the University of California, Berkeley, and a research associate of the National Bureau of Economic Research. Laurence J. Kotlikoff is professor of economics at Boston University and a research associate of the National Bureau of Economic Research. Willi Leibfritz is head of the Department for Macroeconomic and Fiscal Studies at ifo Institute for Economic Research.

Generational accounting has also received its fair share of academic scrutiny (see Haveman 1994; Auerbach, Gokhale, and Kotlikoff 1994; Buiter 1997; Cutler 1993; Diamond 1996; Kotlikoff 1997). Its methodology has been debated in leading economics journals, including the *Journal of Economic Perspectives*, the *National Tax Journal*, and the *Economic Journal*. This debate has stimulated ongoing research, some of which is discussed here, on general equilibrium effects, immigration, and the proper way to discount government receipts and payments in light of their uncertainty. Finally, generational accounting has received a fair amount of public attention. Its findings have been discussed in leading newspapers, magazines, and television news shows in many of the countries for which the accounts have been prepared.

The growing interest in generational accounting is stimulated by the rapid population aging taking place in virtually all the developed world and in much of the developing world. This demographic transition portends enormous fiscal bills in the first half of the next century as those generations born since World War II retire and begin collecting social security pension and old-age health care benefits. The tremendous size of this fiscal liability, its dire implications for our children, and its independence from the traditional deficit is leading economists, government officials, and the press to search for a meaningful measure of our fiscal future.

How It Works and What It Does

Generational accounting is based on the government's intertemporal budget constraint, which requires that either current or future generations pay the government's bills—the present value of the government's projected future purchases of goods and services plus its official net financial liabilities. Subtracting from these bills the present value of projected future net tax payments of current generations gives the present value net tax burden facing future generations implied by current policy. Net tax payments are taxes paid less social security, welfare, and other transfer payments received.¹

By comparing the growth-adjusted lifetime net tax burden facing members of future generations with that facing current newborns (who are assumed to pay, over their lifetimes, only the net taxes implied by current policy), one can assess the sustainability of current fiscal policies. For example, if the growth-adjusted lifetime net tax burden facing future generations is higher than that facing newborns, maintaining current policy through time, which means taxing members of successive new generations at the same rate as members of current generations, is not sustainable because it will not suffice to pay the government's bills.

1. The fact that the government's bills left unpaid by current generations must be paid by future generations does not mean that future generations must pay off (retire) official government debt at some finite future date. They do, however, have to service the debt.

Besides comparing the lifetime tax burdens facing members of future generations with that of newborns, generational accounting calculates the present value changes in net taxes of generations, both living and future, resulting from changes in fiscal policies. Take an expansion of pay-as-you-go-financed social security retirement benefits. Generational accounting shows that this policy helps the current elderly and harms current younger and future generations. Specifically, it records the reduction in the present value net tax payments of older generations arising under the policy as well as the increase in the per capita present value net tax payments of young and future generations (whose increased payroll taxes have a larger present value than do their increased social security retirement benefits).²

Finally, generational accounting can identify the set of sustainable policies available to the government. For example, generational accounting can calculate the immediate and permanent annual percentage increase in income tax revenues (relative to the baseline projected time path of these revenues) needed to achieve intertemporal budget balance. This calculation takes the government's projected expenditures and other tax receipts as given and asks: By what percentage would one need immediately and permanently to raise income taxes so as to be able (in conjunction with other tax receipts) to pay for the government's projected future expenditures and its current net financial liabilities and never have to raise taxes again?

In forming its calculations, generational accounting considers not only the course of future policy but also the future demographic structure of the economy. Projected population totals of currently living generations are a key element in determining the contribution of current generations in paying the government's bills. Projected population totals of future generations are a key element in determining how large will be the burden per future person of covering the bills left unpaid by those now alive.

This Book's Agenda

This book brings together the latest generational accounting results for 17 of the 22 countries listed above: Argentina, Australia, Belgium, Brazil, Canada, Denmark, France, Germany, Italy, the Netherlands, New Zealand, Norway, Sweden, Thailand, Japan, Portugal, and the United States.³ The results are presented in separate chapters, one for each country, but they are also summarized and compared in chapter 4. Chapters 1, 2, and 3 set the stage for these analyses. Chapter 1 discusses the severe limitations of traditional fiscal analysis, namely, deficit accounting. Chapter 2 describes the method of generational accounting, and chapter 3 uses a simulation model to consider how well generational

2. This statement assumes that the return to capital exceeds the growth rate of the economy.

3. Unfortunately, accounts for the other countries were not completed in time for inclusion in this book.

accounting approximates policy-induced changes in generations' true fiscal burdens.

Chapter 1 provides the main motivation for generational accounting⁴—the deficit, at its core, is an arbitrary measure. Rather than measure a country's fiscal position, the deficit, in fact, need bear no fundamental relationship to fiscal policy but, instead, simply reflects the government's choice of how to label its receipts and payments. Chapter 1 drives home this point using a series of models that incorporate intergenerational redistribution by the government, uncertainty, economic distortions, and liquidity constraints. These models are stylized. But the point they make would hold in any neoclassical economic model with rational economic agents and institutions: *Regardless of their true fiscal policies, governments can label their policies so as to report any time path of deficits or surpluses they want.*

The fundamental problem with deficit accounting is that the deficit does not represent the answer to a well-posed economic question. Generational accounting, in contrast, attempts to answer two well-defined economic questions. First, what is the magnitude of the fiscal burden being left to future generations by current policy, and second, how does a change in fiscal policy alter the intergenerational distribution of welfare? In short, generational accounting attempts to understand the generational *incidence* (distribution of burdens) of fiscal policy changes. In so doing, it incorporates a set of incidence assumptions that will not, in general, capture the full range of either microeconomic or macroeconomic responses to policy changes. Consequently, generational accounting should be viewed as a method of approximating the policy-induced welfare changes experienced by different generations.

How well do changes in generational accounts succeed in approximating true generation-specific fiscal burdens? Hans Fehr and Laurence Kotlikoff address this question in chapter 3 with the help of the Auerbach-Kotlikoff dynamic life cycle model. Their approach is to simulate various fiscal policies that produce substantial intergenerational welfare changes. They then use the simulated data to form changes in generational accounts according to the methodology detailed in chapter 2. Finally, they compare these generational account changes with the exact welfare changes arising in the model. They conclude that generational accounting does a pretty good job in approximating actual welfare changes particularly in the case of policies that do not involve substantial changes in the structure of economic incentives.

Country Studies

The country studies, which appear in chapters 5 through 21, have a common structure. They each begin with a description of recent domestic fiscal policy,

4. Chapter 1 was originally published in 1993 in the *Journal of Economics* (suppl. 7, 17–41) under the same title and is reprinted here with the permission of the publisher.

present (in 1995 dollars) generational accounts for 1995, discuss the generational impact of recent or pending policies, and then consider alternative ways to restore generational balance. The 30 economists who produced these studies hail from all corners of the globe. They are almost equally divided between academic economists and economists working for central banks, treasuries, ministries of finance, or international economic institutions. A number of the country studies represent collaborations between the two types of economists, but all of the studies owe a significant debt to their respective governments for providing critically important data.

The studies reveal very substantial and very troubling generational imbalances in the majority of the 17 countries. The countries with extreme imbalances are Japan, Italy, Germany, the Netherlands, and Brazil. In these five countries, future generations face fiscal burdens that are at least 75 percent higher than those of current generations when these burdens are measured as a percentage of lifetime labor earnings.⁵ In Japan and Italy, future generations face burdens that are more than twice those facing current generations. Another five countries have severe imbalance—the United States, Norway, Portugal, Argentina, and Belgium. In these countries, the growth-adjusted fiscal burdens facing future generations are 50 to 75 percent larger than those of current newborns. Three countries—Australia, Denmark, and France—have substantial imbalances that leave their descendants facing 30 to 50 percent higher lifetime net tax rates. Canada appears to be essentially in generational balance. The remaining three countries—New Zealand, Thailand, and Sweden—have negative imbalances; that is, their policies, if maintained, would leave future generations facing lower lifetime net tax rates than current newborns.

In measuring the fiscal burdens facing future generations or, more precisely, the net taxes (taxes paid less transfer payments received) facing future generations, the baseline generational accounts assume no change in either the net taxes to be paid by current generations over the rest of their lives or in the future course of government purchases of goods and services. Alternative assumptions can be and are entertained in this volume. Specifically, we consider the immediate and permanent tax hikes, transfer cuts, or spending cuts needed to achieve generational balance—a situation in which future generations face no higher rate of lifetime net taxation than do those who have recently been born. These alternative characterizations of generational imbalances deliver a complementary message, namely, that in countries with large generational imbalances, very major policy changes are needed to achieve balance.

Take, as an example, a policy of immediately and permanently cutting government spending (purchases of goods and services) to achieve generational balance. In Japan, this policy would entail a 26 percent reduction in govern-

5. The cross-country comparisons of generational accounts in this chapter are based on the results arising from treating educational expenditures as a government purchase rather than a transfer payment. As indicated in chapter 5, treating educational expenditures as transfer payments generates even larger imbalances than those mentioned here.

ment purchases this year and every year into the future. In the United States, roughly a 19 percent reduction is needed, whereas Italy would have to cut its purchases by roughly 53 percent! Proposing such tremendous fiscal adjustments would, presumably, frighten even the most courageous and generationally altruistic politicians. But those politicians who hesitate to act are condemning their nations to more severe fiscal stringency in the future. This is one of the hard lessons of generational accounting: the longer one waits, the larger the adjustment needed to achieve generational balance.

Is official government debt primarily responsible for the generational imbalances reported here? The answer, in general, is no. The real culprit in most of the countries with imbalances is the interaction of their population aging with their large and growing transfer payments to the elderly in the form of pension payments and health care expenditures. The United States is a case in point. Its baseline generational accounts, which treat government education as a form of spending, show future Americans facing lifetime net tax rates that are 51 percent higher than those facing current American newborns. If the U.S. federal debt were miraculously and instantaneously paid off by, say, a philanthropic Martian, future Americans would still face 30 percent higher net tax rates. On the other hand, were the United States able to stop aging, the rate of net taxation of future Americans would actually be 3 percent smaller!

Whither Generational Accounting?

Generational accounting is clearly catching on and appears to be influencing a growing number of policy debates. But will it ultimately replace deficit accounting as our central gauge of a nation's fiscal behavior? It is hard to say. The decision to use generational accounting is not just an intellectual one. It also involves political considerations, some of which militate against generational accounting. But the decision also involves ethical considerations, which have a power of their own. Generational accounting makes us look ahead. It makes us refine our long-term fiscal projections. It makes us consider the rising cost of policy procrastination. It makes us ask tough questions about who will pay the government's bills. It makes us address economic issues, rather than play accounting games. And it makes us acknowledge the extent to which we are expropriating our children's resources by accumulating fiscal liabilities, be they implicit or explicit.

Whether or not generational accounting replaces deficit accounting, the papers collected here make one thing clear: serious discussion of a country's generational policy necessitates producing a set of generational accounts and using these accounts to consider the generational impact of alternative policies. Moreover, keeping track of changes over time in a country's generational policy requires doing generational accounting on an ongoing basis. This is where involvement by governments and international economic institutions, such as the European Union, the OECD, the IMF, the World Bank, the Inter-American

Development Bank, and the Asian Development Bank, is crucial. These entities have the manpower and other resources needed to ensure that accurate and up-to-date generational accounting is done and done routinely. In addition to the means, governments and quasi-governmental entities bear a responsibility to do generational accounting for one simple but very good reason: they represent the collective guardians of our children's economic futures.

References

- Auerbach, Alan J., Jagadeesh Gokhale, and Laurence J. Kotlikoff. 1991. Generational accounts: A meaningful alternative to deficit accounting. In *Tax policy and the economy*, vol. 5, ed. D. Bradford, 55–110. Cambridge, Mass.: MIT Press.
- . 1994. Generational accounting: A meaningful way to evaluate fiscal policy. *Journal of Economic Perspectives* 8, no. 1 (winter): 73–94.
- Buiter, Willem H. 1997. Generational accounts, aggregate saving and intergenerational distribution. *Economica* 64:605–26.
- Cutler, David. 1993. Review of generational accounting: Knowing who pays, and when, for what we spend. *National Tax Journal* 46, no. 1 (March): 61–67.
- Diamond, Peter. 1996. Generational accounts and generational balance: An assessment. *National Tax Journal* 49, no. 4 (December): 597–607.
- Haveman, Robert. 1994. Should generational accounts replace public budgets and deficits? *Journal of Economic Perspectives* 8, no. 1 (winter): 95–112.
- Kotlikoff, Laurence J. 1992. *Generational accounting*. New York: Free Press.
- . 1997. Reply to Diamond and Cutler's reviews of generational accounting. *National Tax Journal* 50, no. 2 (June): 303–14.
- Leibfritz, Willi, Deborah Roseveare, Douglas Fore, and Eckhard Wurzel. 1995. Aging populations, pension systems, and government budgets: How do they affect saving? OECD Economics Department Working Paper no. 156. Paris: Organization for Economic Cooperation and Development.
- Raffelhüschen, Bernd. 1997. Generational accounting in Europe. Luxembourg: European Commission, October.
- Sturrock, John. 1995. Who pays and when? An assessment of generational accounting. Washington, D.C.: Government Printing Office.

This Page Intentionally Left Blank