Chapter Title: Generational Accounts in Sweden

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17   Generational Accounts in Sweden

Robert P. Hagemann and Christoph John

17.1   Introduction and Overview

The calculation of generational accounts is especially appropriate and timely for Sweden, for several reasons. First, reflecting the progressive expansion of the welfare state during the past 30 years, Sweden's tax-transfer system is one of the most complex among developed countries. To the extent that the incidence of taxes and transfer payments varies across age groups in the population, estimated generational accounts will reflect the lifetime impacts of the taxes and transfers. Second, the first half of the 1990s has witnessed very wide swings in public finances in Sweden. As successive governments have introduced discretionary measures to consolidate public finances, it is important to have a sense of the net impact of such measures on the lifetime disposable incomes of living and, notably, future generations. Third, a blueprint for a significant reform of the pension system was endorsed by the major parties in 1994 that aims at reducing pension outlays over the long term. This reform would clearly have a substantial impact on the net taxes of different generations, and generational accounting is a framework especially well suited to assess the impact of the reform.

This chapter presents estimates of generational accounts for Sweden based on projections as of September 1996. The estimates also take into account the

397

prospective pension reform and the consolidation program as of June 1995. In addition, we present estimates that incorporate the impacts of a package of additional measures that was proposed by the government in April 1996 but that had not yet been approved by the Parliament.

The estimated generational accounts vary substantially across generations. Males and females over age 56 benefit from the current tax-transfer system in Sweden, as reflected in the negative values of future net taxes.[1] On the other hand, the accounts of newborns are substantially positive; newborn males could be expected to pay $213,600 in lifetime net taxes on the basis of policies in place in September 1996, while their female counterparts could expect to face a lower but still large net lifetime net tax of $153,600. The net tax liabilities rise steadily across living generations, reaching a maximum of $357,200 for males and $230,300 for females at around age 25. In general, accounts for females are lower than those of males largely because, although high by international standards, the labor force participation rates of women are lower than those of men (so that lifetime gross taxes are correspondingly lower) while their pensions are roughly comparable to those of men.

The estimates suggest that the present fiscal system in Sweden results in substantial intergenerational transfers: unborn generations face very high net tax burdens. As a result of the combined effects of consolidation measures taken in recent years and the pension reform, however, the net tax burden of unborn generations is 22 percent *lower* than those of today's newborns. This reflects the substantial future impact on transfers and taxes of recent measures, if implemented on a sustained basis.

17.2   Recent Fiscal Developments

17.2.1   The First Half of the 1990s

The late 1980s and early 1990s witnessed a substantial deterioration of public finances in Sweden. In 1989, the budget balance of the general government—central government, local governments, and the social security system—recorded a sizable surplus of about 5.5 percent of GDP. On a deterioration of the aggregate revenue ratio from 65.7 percent to 60.1 percent and a surge in spending from 60.3 percent of GDP to 70.5 percent, the general government budget balance moved into substantial deficit, settling at 10.4 percent of GDP in 1994 after peaking at 13.4 percent the previous year. Neither

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1. Results presented in this chapter are based on a treatment of public educational outlays as government consumption. Estimates based on their treatment as transfer payments are reported in chap. 1 of this volume. In both cases, estimates of generational accounts for Sweden are based on all *future* taxes and transfers. Estimates of *lifetime* net taxes could differ from those reported here to the extent that generations alive today have paid higher or lower net taxes in the past than the estimated net taxes projected during the remainder of their lives.

trend is explained entirely by the weakening of economic activity.[2] Most of the increase in the share of public spending was due to increases in transfer payments, which account for a sizable portion of household income. Transfer payments increased by 5 percent of GDP during the period 1990–94, reaching 25.5 percent in 1994. Approximately half of this increase was attributable to higher unemployment benefits and spending on labor market programs, with higher pension outlays accounting for an equivalent share of the increase in the spending ratio.

The deterioration of Sweden's public finances, together with the prospective further weakening of the fiscal situation, had substantial adverse macroeconomic effects that, in turn, placed additional pressures on the authorities to redress the situation. Successive policy packages were, however, inadequate, and the outlook for public finances over the medium term remained tenuous at best. It was estimated that a swing of about 10 percent of GDP in the public sector's primary balance was still required to stabilize the debt ratio (see Lachman et al. 1995).

The poor budgetary outlook was also well reflected in estimates of generational accounts at that time. On the basis of the policies in place as of early autumn 1994, it appeared that future generations would be facing very substantial net tax burdens. Unborn males and females faced prospective net tax payments of $209,700 and $124,700, respectively.[3] These estimated net tax bills were 37 percent *higher* than those facing the youngest living generations at that time.

Following the elections in September 1994, the newly elected Social-Democrat government proposed a number of further measures aimed at putting Sweden's public finances back on a sustainable track. These measures (table 17.1), totaling some SKr 56.4 billion, together with SKr 19.4 billion of additional measures to be included in the subsequent budget and the major pension reform that had been separately approved by the Parliament, had a very substantial impact on the fiscal outlook.[4] Reflecting the effects of these prospective measures, in particular of the reductions in future pension benefits, the

2. A large portion of the decline in the revenue ratio resulted from an unanticipated loss of revenue due to the 1990–91 tax reform. Some of the decline was also attributable to a lowering of the payroll tax rate by 4 percentage points, which nonetheless remained high at 33 percent in 1994. Estimates of the share of the cyclical component of the deterioration of the general government budget balance range from 50 percent to over 60 percent. In either case, a substantial portion is attributable to the structural imbalance in Swedish public finances at that time.

3. These estimates are based on assumed productivity growth of 1.5 percent and a discount rate of 4.65 percent. Moreover, these estimates are based on an age-consumption profile observed in the United States, which differs significantly from that observed in Nordic countries.

4. The principal features of the pension reform were (1) replacement of the two-pension system (basic pension and earnings-related pension) by a single, multitiered pension consisting of a defined-benefit component and a defined-contribution component and (2) tightening the linkage between real wage developments and indexation of the defined-benefit pension. See Ministry of Health and Social Affairs (1994) and Hagemann and John (1995, 1997).

Table 17.1   **Consolidation Measures, 1994–96**

Measure	Amount (billion SKr)
Measures taken prior to November 1994	18.3
November 1994 package	56.4
Revenue increases	36.6
Taxation of dividends and capital gains on stocks	6.5
Higher tax rate on private pension income	2.0
Retained tax on wealth	2.0
Higher tax on property	2.5
Limited indexation of income tax allowances	4.5
Contribution to sickness insurance	14.1
State income tax raised from 20% to 25%	4.3
Other revenue increases, net	0.7
Spending reductions	24.5
Abolition of special child allowance	3.2
Reforms of family support	3.7
Early retirement pensions	4.3
Military spending	4.0
Reduced state consumption	2.0
Limited indexation of pensions, etc.	8.4
Slower phasing down of interest rate support	−2.0
Other spending reductions	0.9
Induced reduction in revenues due to spending cuts	−4.7
1995/96 Budget proposal, January 1995	19.3
Spending reductions	24.6
Lower child allowances and compensation in family allowances	3.6
Pensions	3.8
Sickness insurance	1.5
Reduced investment in roads and railways	2.7
Reduced spending on tertiary education	1.0
Reduced training subsidy in ALMP	1.0
Reduced support for enterprise-based training	1.4
Labor Market Fund	3.9
Other	5.7
Induced reduction in revenues due to spending cuts	−2.1
Other	−3.2
1995/96 Budget proposal, April 1995	3.6
Spending reductions	8.7
Reduced unemployment, sickness, and parental insurance benefits	3.8
Reduced housing benefits	1.2
Changed rules concerning compensation in ALMP	2.5
Other	2.5
Revenue measures	−5.1
Lower VAT on food	−7.7
Other	2.5
April 1996 measures	8.0
Spending reductions	6.0
Revenue measures	2.0
Total consolidation measures	125.6

Sources: OECD (1997) and Swedish authorities.

Table 17.2   **Profile of Savings of Consolidation Program (percent of GDP)**

Year	Annual Impact	Cumulative Impact
1995	3.5	3.5
1996	2.0	5.5
1997	1.5	7.0
1998	1.0	8.0

Source: OECD (1997).

net tax burdens of unborn males and females were reduced to $141,500 and $89,200, respectively. Moreover, the net tax burdens of the unborn were estimated to fall *below* those of newborns at that time, a result attributable mostly to the impact of the pension reform.

Despite the improved fiscal outlook, the government saw the need for additional measures, motivated in part by the goal of achieving the fiscal targets of the Maastricht Treaty. In June 1995, the government presented the "convergence program," aimed at meeting the Maastricht budgetary criteria for entry into the Economic and Monetary Union by 1998. Measures to improve permanently public finances (the "consolidation program") played a major role. In April 1996, additional measures totaling a net amount of SKr 8 billion were proposed, three-quarters of which consisted of expenditure cuts. The net effect of all these measures was estimated to reach SKr 125 billion by 1998, or 8 percent of GDP (see table 17.2).

17.2.2   The Outlook to 2000

Reflecting in part the expected effects of the measures adopted to date, the fiscal outlook has improved considerably (table 17.3). Discretionary measures do not alone account for the improved prospects for public finances, however. A significant portion of the strengthened fiscal outlook is attributable to an improved economic forecast. With wage growth projected at twice the rate of GDP growth during the initial years of the period 1996–2000, the growth of wage tax receipts is projected to outpace GDP growth. Additional revenue measures, including higher real estate taxes and a change in value-added tax (VAT) collection—which should have only a temporary positive impact on revenues—will raise the share of revenue in GDP by close to 1 percent on a sustained basis by the year 2000.

Further measures are expected on the expenditure side as well. Public consumption will increase initially during the period 1996–2000, reflecting mostly delayed procurement of defense-related hardware. It also reflects the shift into 1996 of the increase for public sector wages, which had been approved in 1995. By holding the growth in outlays below the growth in nominal GDP, public consumption is projected to fall from 27 percent of GDP in 1996 to 24.4 percent in 2000, while overall public spending should fall from 68 percent of GDP to 60.2 percent. In turn, the overall fiscal balance is expected to continue to

Table 17.3   **Public Sector Finances, 1995–2000**

	1995	1996	1997	1998	1999	2000
In Billions of Kronor						
Revenue	983	1,059	1,101	1,153	1,200	1,256
Taxes and charges	824	897	942	990	1,037	1,088
Capital income	94	89	86	88	86	90
Other income	65	73	73	75	77	78
Expenditures	1,115	1,144	1,158	1,168	1,188	1,219
Transfers to households	397	393	396	401	409	420
Subsidies	130	125	126	122	121	121
Interest	116	127	128	126	126	129
Consumption	423	448	458	468	479	494
Investment	49	52	50	51	53	55
Financial balance	−132	−85	−57	−14	12	37
Central government	−144	−102	−62	−19	3	28
National pension fund	18	16	15	14	−14	12
Local government	−6	0	−11	−10	−5	−3
Central government borrowing requirement (net)	139	76	59	16	−5	−25
Primary balance	−109	−48	−15	23	51	76
In Percent of GDP						
Revenue	60.1	62.8	62.5	62.3	61.8	62.0
Taxes and charges	50.4	53.2	53.5	53.5	53.4	53.7
Capital income	5.7	5.3	4.9	4.8	4.4	4.4
Other income	4.0	4.3	4.1	4.1	4.0	3.9
Expenditures	68.2	67.9	65.7	63.1	61.2	60.2
Transfers to households	24.3	23.3	22.5	21.7	21.1	20.7
Subsidies	7.9	7.4	7.2	6.6	6.2	6.0
Interest	7.1	7.5	7.3	6.8	6.5	6.4
Consumption	25.9	26.6	26.0	25.3	24.7	24.4
Investment	3.0	3.1	2.8	2.8	2.7	2.7
Financial balance	−8.1	−5.1	−3.2	−0.8	−0.6	1.8
Central government	−8.8	−6.0	−3.5	−1.0	−0.2	1.4
National pension fund	1.1	0.9	0.9	0.8	−0.7	0.6
Local government	−0.4	0.0	−0.6	−0.5	−0.3	−0.1
Central government borrowing requirement (net)	8.5	4.5	3.3	0.9	−0.3	−1.2
Primary balance	−6.7	−2.8	−0.9	1.2	2.6	3.8
Memorandum Items						
GDP (billion SKr)	1,636	1,686	1,762	1,851	1,942	2,026
Net debt (billion SKr)	454	540	584	603	598	572
Net debt (% of GDP)	27.8	32.0	33.2	32.6	30.8	28.2
Gross debt (billion SKr)	1,303	1,375	1,432	1,456	1,456	1,437
Gross debt (% of GDP)	79.7	81.5	81.3	78.7	75.0	70.9

Source: Ministry of Finance, *Sweden's Economy* (Stockholm, April 1996), 59.

improve during the remainder of the decade. The general government primary balance is projected to move into surplus in 1998, followed by a surplus in the overall balance in 1999. Correspondingly, the ratio of gross debt to GDP would peak in 1997 and begin to decline in 1999. The ratio of net debt to GDP would begin to decline sooner, however, reflecting improvements in the financial balance of the pension system.

The paper now turns to a presentation of estimated generational accounts, preceded by a brief description of the data and key assumptions used in the estimates.

17.3   Data Sources

The construction of generational accounts requires estimation of three components: (1) the present value of net tax payments of living generations, (2) government net wealth in the base year, and (3) the present value of future government consumption. The intertemporal government budget constraint then allows the derivation of net tax payments imposed on future generations as a residual.

17.3.1   Taxes and Transfers

The main ingredients in the calculation of generational accounts of living generations are simulations of their net lifetime tax payments (taxes paid minus transfers received). These are obtained by projecting the per capita taxes and transfers by age and sex group derived from the most recent (1994) Income Distribution Survey (IDS). In each year from 1995 to 2000, per capita taxes and transfers derived from the IDS were calibrated to yield projected aggregate spending and receipts, which take into account the anticipated effects of the ongoing consolidation program (see above and table 17.3). Thereafter, per capita amounts are assumed to increase at the same rate as labor productivity growth.

Several taxes and transfers have been distinguished in estimating generational accounts in Sweden. Of the eight taxes used in this study, age- and sex-specific per capita estimates for seven were obtained from the IDS: (1) taxes on personal income paid to the central government, (2) taxes on personal income paid to local governments, (3) property taxes, (4) wealth taxes, (5) taxes on capital income, (6) taxes on income from self-employment, and (7) social security contributions. Finally, as no age- or sex-specific information was available on VAT and excise taxes, aggregate amounts were distributed across age groups using consumption patterns observed in Norway.[5]

Per capita estimates of transfer payments are available from the IDS for nine transfer items: (1) pensions, (2) sick pay, (3) labor market assistance,

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5. The authors are grateful to Carl Gjersem (Ministry of Finance, Norway) for providing these data.
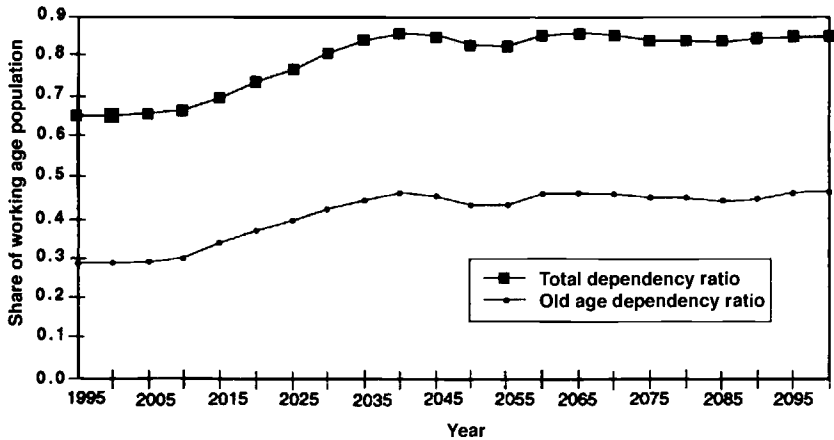
Fig. 17.1   Dependency ratios, 1995–2100

(4) parental allowances, (5) educational grants, (6) housing allowances, (7) child allowances, (8) social assistance, and (9) allowances to single parents and other allowances. As in the case of taxes, transfers are assumed to increase at the rate of productivity growth after the year 2000. The IDS does not provide information on the age- and sex-specific distribution for benefits-in-kind (education, child care, etc.). Therefore, these expenditures were included in government consumption.[6]

Demographic projections obtained from the World Bank (as of July 1996) were used. These projections assume a net reproduction rate growing from 0.969 in 1995 to 1.000 in 2030, leading to a stable population over the long run. During the same period, the total dependency ratio is expected to rise from 65.2 to 80.4 percent, reflecting entirely the increase in the old-age dependency ratio from 28.7 to 42.6 percent (see fig. 17.1).[7]

17.3.2   Government Net Wealth and Government Consumption

Government net wealth consists of the difference between government financial assets and gross debt. At the beginning of 1995, public sector net financial liabilities equaled 23.5 percent of GDP (see Organization for Economic Cooperation and Development [OECD] 1995, table A35). This figure comprises consolidated net liabilities of central and local governments and the social security sector. The present value of government consumption—including consumption, investment, and nonhousehold subsidies—was obtained us-

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6. But see chap. 1 in this volume for estimates based on a treatment of educational outlays as transfer payments.

7. The total dependency ratio is the sum of the number of children under age 18 and the number of persons aged 65 or older as a percentage of the population aged 18 to 64. The old-age dependency ratio is the number of persons aged 65 or older as a percentage of the population aged 18 to 64.

ing the estimates and projections of the Ministry of Finance for 1995–2000. After 2000, it is assumed that expenditures on these items grow with the assumed rate of labor productivity growth.

17.3.3 Labor Productivity Growth and the Discount Rate

The rate of labor productivity growth and the discount rate are critical parameters in generational accounting. Higher labor productivity growth is assumed to result in higher taxes, transfers, and government consumption, leading in turn to higher net tax payments of living as well as of future generations. The higher the discount rate, on the other hand, the lower the present value of taxes, transfers, and government consumption. The base-case scenario assumes labor productivity growth of 1.5 percent per annum and a constant 5 percent discount rate.[8] In order to demonstrate the sensitivity of the results to differences in both labor productivity growth and discount rates, generational accounts have also been calculated using labor productivity growth rates of 1 and 2 percent and discount rates of 3 and 7 percent.

17.4 Results

17.4.1 Base-Case Scenario

Base-case results are presented in table 17.4. Column (1) shows age-specific generational accounts for combined male and female generations, both living and future; estimates for males and females separately are shown in columns (2) and (3). In order to facilitate comparisons with the results of other countries, the estimates are shown in U.S. dollars.[9] The accounts display a familiar pattern. Older generations are net beneficiaries of the existing system; generations under age 60 can expect to face a *positive* net tax burden, while the tax burdens of older generations are *negative*. The accounts reach their maximum at age 25. Tax burdens for the very young generations are lower, reflecting the substantial transfers paid to them (child allowances, educational grants, etc.). Generations older than age 25, on the other hand, face less heavy tax burdens since the present value of the transfers they receive (pensions, health insurance) increases slowly. Reflecting their old-age pensions, generations aged 60 or older can expect to receive net transfers over their remaining lifetimes. Table 17.5 decomposes the base-case results into different tax and transfer items. Results indicate that the present value of social security payments for newborns is almost as high as direct tax payments. Older people face high pension payments, but they also pay considerable amounts of taxes.

The consecutive consolidation programs adopted in recent years in Sweden

8. This is close to the average rates that prevailed in Sweden over the past decades. See Hagemann and John (1995, 1997).

9. The exchange rate applied was 7.133 Swedish kronor per U.S. dollar, which is the average exchange rate for 1995. See International Monetary Fund (1996).

Table 17.4   **Generational Accounts: Base Case (U.S. dollars)**

Generation's Age in 1995	Present Value of Net Tax Payments		
	Joint (1)	Male (2)	Female (3)
0	184,347	213,631	153,599
5	203,429	238,046	167,003
10	226,351	267,260	182,938
15	253,510	310,979	202,010
20	281,194	338,327	221,982
25	295,229	357,188	230,272
30	283,714	341,329	222,320
35	261,900	310,973	209,443
40	228,488	267,844	186,320
45	177,195	206,811	146,190
50	105,251	127,801	81,224
55	16,514	22,667	10,232
60	−66,304	−72,493	−60,262
65	−110,848	−127,728	−95,202
70	−97,797	−112,413	−85,130
75	−79,722	−86,939	−74,003
80	−58,074	−59,159	−57,344
85	−33,182	−30,020	−34,954
90	−6,481	−5,758	−6,747
Future generations	143,474		
Generational imbalance[a]	−22.2		

Source: Authors' calculations.

Note: Labor productivity growth assumed to be 1.5 percent; discount rate, 5 percent.

[a]Difference between present values of net tax payments of future generations and newborns as a percentage of present value of net tax payments of newborns.

have had a substantial impact on public finances. To the extent that these deficit reductions have been effected by measures that—if sustained—will have lasting effects on Swedish households, these are also reflected in the generational accounts. In 1994, at a time when the fiscal deficit reached 11.7 percent of GDP, future generations faced tax burdens estimated to be roughly 37 percent higher than those of newborns at the time. Taking into account the long-term impacts of subsequent and future deficit reduction measures, the estimated net tax burden of future generations—though still positive—is *lower* than that of newborns in 1995.[10]

10. In addition to the effects of discounting, this result also reflects the assumption used in this study that per capita transfers and taxes grow at the rate of productivity growth beyond the year 2000. Given the targeted budgetary surplus in 2000 (1.8 percent of GDP), this implies that budgetary surpluses are sustained thereafter. The importance to generational accounting of taking into full account the long-term implications of budgetary measures adopted today is illustrated by a comparison of the results presented here and those obtained by the Swedish Ministry of Finance, as reported in OECD (1997). There, future generations are estimated to face a substantially *higher*

Table 17.5   **Composition of Joint Generational Accounts: Base Case (U.S. dollars)**

Generation's Age in 1995	Present Value of Tax and Transfer Payments						
	Total	Direct Taxes	Social Security	Indirect Taxes	Pensions	Labor Market Programs	Other
0	184,347	87,835	83,733	105,965	40,484	23,595	29,107
5	203,429	104,041	99,201	110,557	47,947	27,957	34,475
10	226,351	123,250	117,601	116,122	56,694	33,144	40,785
15	253,510	145,585	139,237	123,069	66,560	39,300	48,521
20	281,194	169,929	161,497	127,711	77,622	46,737	53,586
25	295,229	182,721	166,292	127,953	91,496	40,560	49,702
30	283,714	186,716	159,890	122,200	107,481	34,988	42,622
35	261,900	186,576	147,762	115,872	125,640	29,948	32,722
40	228,488	181,743	131,155	109,336	146,183	25,460	22,104
45	177,195	171,504	108,962	101,119	168,542	21,744	14,105
50	105,251	155,998	81,962	91,176	194,532	17,739	11,614
55	16,514	129,700	50,108	80,148	219,986	12,280	11,177
60	−66,304	105,349	19,212	69,237	242,477	5,871	11,753
65	−110,848	81,533	0	57,263	236,977	202	12,464
70	−97,797	58,885	0	46,270	189,994	21	12,937
75	−79,722	41,336	0	35,203	143,557	1	12,703
80	−58,074	24,461	0	24,770	95,741	1	11,563
85	−33,182	11,017	0	14,219	50,272	0	8,147
90	−6,481	1,612	0	2,284	8,613	0	1,764

Source: Authors' calculations.

Note: Labor productivity growth assumed to be 1.5 percent; discount rate, 5 percent.

It is useful to emphasize, however, that the improvement in the generational accounts of future generations reflects in large part the very high tax payments facing living Swedes. This is illustrated by comparing the estimated lifetime tax burdens of newborns in Denmark and Norway, who face much lower net tax burdens—$84,000 and $106,300, respectively—than their Swedish counterparts (see chaps. 10 and 16 in this volume). When account is taken of lower average incomes in Sweden than in Denmark and Norway, the effective tax burdens faced by Swedish newborns would also appear to be high.[11]

17.4.2 Sensitivity Analysis

Generational accounts are very sensitive to two assumptions: labor productivity growth and the discount rate. Table 17.6 reports the estimated accounts

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tax burden (150 to 200 percent higher) than newborns. These estimates are based, however, on the assumption that the policies that yielded the deficit of 8.1 percent of GDP in 1995 would remain in place in the future, no account having been taken of the expected effects of the consolidation program.

11. World Bank data report per capita GDP (1994, adjusted for purchasing power parity) of $17,850 in Sweden, $20,800 in Denmark, and $21,120 in Norway.

Table 17.6   **Generational Accounts under Different Assumptions (U.S. dollars)**

	$g = 1$			$g = 1.5$			$g = 2$		
	$r = 3$	$r = 5$	$r = 7$	$r = 3$	$r = 5$	$r = 7$	$r = 3$	$r = 5$	$r = 7$
Present generation[a]	292,419	163,206	97,469	333,009	184,347	108,258	378,757	208,756	120,741
Future generations	268,292	119,236	40,780	309,630	143,474	53,164	351,439	171,249	67,534
Generational imbalance[b]	−8.3	−26.9	−58.2	−7.0	−22.2	−50.9	−7.2	−18.0	−44.1

Note: g is labor productivity growth (percent); r is discount rate (percent).

[a]Account of newborns in the base year, 1995.

[b]Difference between present values of net taxes of future generations and newborns as a percentage of present value of net taxes of newborns in 1995.

for newborns and future generations under different assumptions. Although the sensitivity of the estimates is evident, the principal conclusion emerging from the base-case scenario is robust to different assumptions: a sustained implementation of the consolidation program approved to date will reduce substantially the net tax burden of future generations, to a level that is below the lifetime tax burdens of many living generations.

In general, the higher the discount rate, the lower the generational accounts of future generations. This reflects the fact that a higher discount rate assigns a lower weight to future flows. With higher labor productivity, the absolute burden on future generations rises, whereas the relative burden falls. Over their life cycles, individuals first receive net transfers, then make net tax payments, and subsequently again receive net transfers when old. In this framework, a rise in productivity boosts taxes and transfers equally after 2000. However, since taxes tend to be higher than transfers during the early years of the projection, this leads to higher generational accounts for current newborns. By contrast, future generations initially face a lower level of debt inherited from living generations. Subsequently, their accounts rise more quickly.[12] This results in a lower generational account for future generations and, correspondingly, a larger difference between living and future generations.

Policies to Restore Generational Equity

The base-case calculations suggest that future generations will be better off than newborns. From an intergenerational equity perspective, a more balanced sharing of the burden could be considered. This could be achieved by (1) raising government spending permanently, from which living generations will benefit; (2) reducing permanently gross taxes (i.e., gross of transfers); or (3) increasing permanently gross transfers.

Table 17.7 reports the results of several such simulations. Each simulation assumes a permanent change in one or another policy lever (e.g., tax revenues sufficient to yield an equal net tax burden for newborns and future generations). Each row of table 17.7 reports the level of the targeted variable as a

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12. It should be recalled that net tax payments of any future generation equal the net tax payments of the preceding future generation augmented by the rate of productivity growth.

Table 17.7   **Policy Options to Achieve Generational Equity**

Policy Option	1995	1996	1997	1998	1999	2000
Increase government consumption by 7.6%	27.8	28.6	28.0	27.2	26.6	26.2
Lower all taxes by 3.4%	48.8	51.5	51.7	51.7	51.6	51.9
Reduce income tax rates by 9.3%	17.1	17.5	17.4	17.3	17.1	17.3
Increase household transfers by 7.7%	26.2	25.1	24.2	23.3	22.7	22.4

Source: Authors' calculations.
Note: Table reports level of targeted variable as share of GDP.

share of GDP in each year from 1995 to 2000 needed to achieve intergenerational equity. Thus, for instance, a permanent reduction of 3.4 percent of GDP in all taxes, including social security contributions, would, in achieving intergenerational equity, result in a revenue ratio of 51.9 percent of GDP, versus 53.7 percent under the base-case scenario.

Supplementary Budget Bill of April 1996

The consolidation program of June 1995 targeted a reduction of the general government deficit to 5.2 percent in 1996, 3 percent in 1997, and a balanced budget by 1998.[13] By April 1996, although the projected budget deficit for 1996 had been lowered to 4.0 percent of GDP, the fiscal targets for 1997 and 1998—needed to meet the Maastricht budgetary criteria—could not be met. The government therefore announced a number of additional permanent measures in the supplementary budget bill in April 1996. First, a number of already specified measures totaling SKr 8 billion would be introduced in 1997 and 1998, with heavy front-loading. Three-fourths of the measures consist of expenditure cuts. Revenue increases are to come in particular from higher central government income taxes and an increase in deposit insurance premiums.[14] Second, the government announced that it will implement measures in 1998 to achieve additional savings of SKr 6 billion, although these have not yet been specified. Taking these measures into account, the deficit would fall to 2.6 percent of GDP in 1997 and would be eliminated in the following year. The impact of these measures on the estimated generational accounts is vividly evident in table 17.8. Reflecting the substantial impact of these additional measures on living generations, the net tax burdens of future generations would fall yet further.

13. For a recent assessment of the convergence and the included consolidation program, see Ministry of Finance (1996).
14. These measures were specified by the government, but most of them have not yet been adopted by the Parliament. This is in contrast to the consolidation program: the Swedish Parliament has adopted decisions on the entire program.

Table 17.8   **Generational Accounts under the Policy Scenario**

Generation's Age in 1995	Present Value of Net Tax Payments		
	Joint	Male	Female
0	188,751	218,536	157,476
5	208,428	243,656	171,377
10	232,062	273,670	187,906
15	259,987	309,283	207,610
20	288,058	346,135	227,869
25	302,077	365,025	236,083
30	290,334	348,932	227,893
35	268,158	318,185	214,679
40	234,217	274,485	191,072
45	182,198	212,695	150,271
50	109,329	132,630	84,500
55	19,614	26,421	12,665
60	−64,063	−69,715	−58,544
65	−109,181	−125,639	−93,928
70	−96,565	−110,861	−84,176
75	−78,892	−85,889	−73,347
80	−57,606	−58,560	−56,964
85	−33,040	−29,847	−34,830
90	−6,481	−5,758	−6,747
Future generations	132,244	152,979	110,236
Generational imbalance[a]	−29.9		

Source: Authors' calculations.

Note: Labor productivity growth assumed to be 1.5 percent; discount rate, 5 percent.

[a]Difference between present values of net tax payments of future generations and newborns as a percentage of present value of net tax payments of newborns.

17.5   Conclusion

Motivated in part by concerns about the potentially substantial adverse macroeconomic consequences of an unsustainable budgetary position and in part by the goal of meeting the fiscal criteria of the Maastricht Treaty, Swedish authorities have introduced substantial budget consolidation measures in recent years. The consequences for public finances as traditionally measured in terms of the cash-flow budget balance and projected public debt levels are evident. The potency of the measures is also evident from an intergenerational accounting perspective, wherein the net tax burdens of future generations—though still positive and large—are estimated to fall below those of living generations. Whether this shift in the relative tax burdens of living and future generations is desirable rests on normative considerations.

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