Concept and Methodology of Generational Accounts

This note summarizes
"Generational Accounts: A Meaningful Alternative to Deficit Accounting",

by Auerbach, Alan J., Jagadeesh Gokhale, Laurence J. Kotlikoff, in *Tax Policy and the Economy* 5, 1991, NBER

Why Generational Accounting?

- The generational accounting represents an alternative to using the fiscal deficit to gauge intergenerational policy.

  - The measured deficit need bear no relationship to the underlying intergenerational stance of fiscal policy

- No consensus as to how to measure the deficit

  Scope of budget: include current social security surplus, the full value of S&L bail out?

  concern about adjustments for unfunded government retirement liabilities, inflation, growth, and government acquisition and sale of assets

- What concept is the deficit supposed to measure?

  - The deficit is related with the intergenerational redistribution of welfare.
  - But, from the theoretical perspective, the deficit is an arbitrary accounting construct whose value has no necessary relation to the question of generational burden.
  - Examples

  1) labeling social security taxes as taxes or loan to government?

     labeling social security benefits as transfer or as repayment of loans?

     Different labeling changes the deficit level but does not change the lifetime budget constraints of economic agents.

  2) Pay-as-you-go financing of US social security system

     Substantial intergenerational redistribution but can label as no deficit.

  3) Korean public pension system

     large surplus at present

     but, too generous benefit promised compared with contribution will shift large burden to future generations.

- What is an appropriate measure consistent to the intergenerational redistribution?

  - Generational Accounts (GA)

    GA for one generation is net payment to government for the remaining lifetime, which is the present value of tax payment – transfer from government.

  - Comprehensive in that this consider all receipts and payments collected from or paid to all the levels of governments.

  - Invariant to changes in accounting labels.

Generational Accounts (GA)

- Present value of net tax payment of representative individual of generations for remaining lifetime
  - Net tax: tax payment – transfer income
- Generational accounts starts with the following government's intertemporal budget constraint.

$$\sum_{s=0}^{D} N_{t,t-s} + \sum_{s=1}^{\infty} N_{t,t+s} + W_t^g = \sum_{s=t}^{\infty} G_s \prod_{j=1}^{s} \frac{1}{1+r_j} \qquad (1)$$

$N_{t,s}$: PV of net tax for the remaining lifetime of the cohort born at s, evaluated as of t

G: government consumption

(government consumption here includes the government purchase of durable goods as well as nondurable goods)

W: government net wealth

- "Zero sum" feature of government's intertemporal budget constraint.

  - Some generation has to pay for any benefit to another generation.

- What are the generations?

  - Males and females by specific years of age.

- A set of generational accounts is a set of net payment of each generation and the net payment of each generation is defined as:

$$N_{t,k} = \sum_{s=\max(t,k)}^{k+D} \overline{T}_{s,k} P_{s,k} \prod_{j=t+1}^{s} \frac{1}{1+r_j} \qquad (2)$$

$\overline{T}_{s,k}$: the projected average of net payment to government

$P_{s,k}$: the number of surviving members of the cohort

Computation of GA

- Divide current generations by age.
- Treat future generations as one generation.

  i.e. we assume that each successive future generation's net payment is the same up to an adjustment for real productivity growth.
- Compute net payment of current generations under current fiscal policies
- The total fiscal burden of future generations is determined as a residual, once the net payment of current generations, government consumption, and government net wealth are determined (see equation (1)).

  This implies that Fiscal burden of long-term budgetary imbalance is born by future generations.

Assessing intergenerational stance of fiscal policy

- Indices for fiscal sustainability
  - Generational Imbalance (GI)

    = (net payment of future generations/net payment of age 0 -1)× 100

    If GI >0, current fiscal policies are not sustainable.

    i.e. in order to attain long-term fiscal balance, net tax burden has to be adjusted sometime in the future.

  - Required tax (and transfer) adjustment for long-term budgetary balance

    Adjust tax burden (and transfer) of cohorts, alive in a specific year and thereafter, proportionally until the PV of tax revenue of the future matches that of government expenditure including transfer payment and government consumption.

How do the net payment enter private budget constraints?

- Lifetime Budget Constraint of each generation

$$\sum_{s=t}^{k+D}\left(\overline{C}_{s,k}+\overline{I}_{s,k}\right)P_{s,k}\prod_{j=t+1}^{s}\frac{1}{1+r_j}=W_{t,k}^{P}+\sum_{s=t}^{k+D}\overline{E}_{s,k}P_{s,k}\prod_{j=t+1}^{s}\frac{1}{1+r_j}-N_{t,k} \qquad (3)$$

$\overline{C}_{s,k}$: consumption (average)

$\overline{I}_{s,k}$: private net intergenerational transfers (average)

$\overline{E}_{s,k}$: Labor Earnings (average)

$W_{t,k}^{P}$: Net wealth

- The PV of the cohort's projected consumption plus its net intergenerational transfers equals resources including net wealth, human wealth, net of net payment to government.

Comparison of GA with Deficit

- The effect of equal and simultaneous reduction in contributions and benefit payments.

- Using GA:

No difference in the budget constraint between labeling tax and transfers and private saving and return of principle and interest net of old age tax.

- Deficit:

Labeling tax and transfers: no change in deficit

Labeling private saving and return net of old age tax:

- reduction in deficit through increase in old age tax.

Computing net payments, other components of government and each generation's budget constraints

A. Data Sources for calculating Net Payments

- Requires projections of net payments, population projection and time path of interest rate. (see equation (2))
- Population Projection:

  Use projection by Social Security Administration and extend the projection up to the year 2100.
- SIPP data provides data for estimating age-sex profiles for most of receipts and payments, except for Medicare and Medicaid.
- Use Waldo, Sonnefeld and McKusick's (1989) calculations of average Medicare expenditure by age.
- Assume that age profile of Medicaid is the same as that of Medicare.

B. Determining Net Payments

- Compute the age-sex profile of receipts and payments using data from SIPP and other sources.

  - Age Profile ($R_j^{m,}$ R_j^f) shows relative level compared with the level for 40-year-old males ($h_{40,i,t}{}^m$)

- Given these age-sex profiles, determine initial year (1990) average values for each age-sex cohort, by benchmarking against aggregate totals (H_{it}) reported NIPA's aggregate values of government receipts and transfers.

  i.e. solve the equation (4) for $h_{40,i,t}{}^m$ given R_j^m, R_j^f, $H_{it.}$

$$H_{it} = h_{40,i,t}^m \sum_{j=0}^{D} \left(R_{j,i}^m P_{t,t-j}^m + R_{j,i}^f P_{t,t-j}^f \right) \qquad (4)$$

- Assume that the age and sex-specific average values of receipts and payments in future years equal those calculated for 1990 adjusted for an assumed growth rate.

  i.e. value for age i at $t+D$ is $(1+g)^D$ × value for age i at t

  g : labor productivity growth rate.

- Sum over to get net payment at each year
- Compute the present value of the net payment for the remaining lifetime.

C. Treatment of Labor Income Tax

- Aggregate value of labor income tax is 80.4% of total federal, state, and local income taxes, where 80.4% of labor's share of net national product.
- Assumed that labor's share of proprietorship of net national income as well as its share of indirect tax payments equals its share of net national product.

D. Treatment of Contributions for Social Insurance

E. Treatment of Capital Income Tax

- Requires special treatment for two related reasons:

  1) taxes on capital income may be capitalized into the value of existing (old) assets.

  2) time pattern of income and tax payments may differ.

- Capitalization results from tax incentives provided to new investment. A simple arbitrage argument indicates that the extra tax burden on the old assets should be capitalized on these assets' values, reflecting their less favored treatment
- Presence of accelerated depreciation allowances underestimates long-run tax burden on new investment, if the tax burden is evaluated with the initial tax payments from new investment.

- Adjustment for the capitalization:

  The capitalized value should be attributed to the initial asset owner rather than future generations.

  i.e. The correction to actual tax payments should results in a zero tax burden on the income from new investment.

- Correction starts with the following the formula for user cost of capital.

$$C = \frac{(r+\delta)(1-\tau z)}{1-\tau} \qquad \text{(A1)}$$

r : the investor's required after-tax return

δ: economic rate of depreciation

z : PV of depreciation allowance

- Two measures need to be assessed:

1) tax-based discount on old capital (Q)

2) difference between the marginal effective tax rate on new capital and average capital income tax rate (Δ)

$$Q = \tau(z - z^0) \qquad \text{(A2)}$$

$$m = \frac{C - (r + \delta)}{C - \delta} \qquad \text{(A3) (marginal effective tax rate on new capital)}$$

$$\alpha = \frac{\tau(C - b)}{C - \delta} \qquad \text{(A4) (average effective tax rate on new capital)}$$

$$\Delta = (\alpha - m)(C - \delta) \qquad \text{(A5)}$$

z^0 is depreciation allowance for old capital

$$bK = \varphi \int_0^{\infty} I_0 e^{-(n+\pi)s} e^{-\varphi s} ds = \frac{\varphi}{n+\pi+\varphi} I_0 \qquad \text{(A6)}$$

(total depreciation allowance on the existing capital

assumptions:

n : investment growth rate

π : inflation rate

ψ : constant geometric written-off rate

$$K = \int_0^{\infty} I_0 e^{-ns} e^{-\delta s} ds = \frac{1}{n+\delta} I_0 \qquad \text{(A7)}$$

(capital stock equals the sum of depreciated net investment)

$$b = \frac{\varphi(n+\delta)}{n+\pi+\varphi}$$

$$z^0 = \frac{1}{K}\int_0^\infty I_0 e^{-(n+\pi)s} e^{-\varphi s} \int_0^\infty e^{-(r+\pi)v} \varphi e^{-\varphi v}\, dv ds$$
$$= \frac{\varphi}{r+\pi+\varphi}\frac{I_0}{K(n+\pi+\varphi)} = \frac{\varphi}{r+\pi+\varphi}\frac{n+\delta}{n+\pi+\varphi} = \hat{z}\frac{n+\delta}{n+\pi+\varphi} \qquad \text{(A9)}$$

$\hat{z}$: PV of depreciation allowances per unit of depreciated basis

(PV of all depreciation allowance on old capital equals the basis of each vintage multiplied by the PV of remaining depreciation deducitons on that vintage)

Solve for Q and Δ:

$$\Delta = (r+\delta)\tau z - \frac{(r+\pi+\varphi)}{n+\pi+\varphi}\tau\hat{z} \qquad \text{(A10)}$$

$$Q = \tau z - \tau\hat{z}\frac{n+\delta}{n+\pi+\varphi} \qquad \text{(A11)}$$

- Assuming $\hat{z} = z$

$$\Delta = (r+\delta)\tau z\left(1-\frac{(r+\pi+\varphi)(n+\delta)}{(n+\pi+\varphi)(r+\delta)}\right) \qquad \text{(A12)}$$

$$Q = \tau z\left(1-\frac{n+\delta}{n+\pi+\varphi}\right) \qquad \text{(A13)}$$

$$z = \int_0^\infty e^{-(r+\pi)v}\varphi e^{-\varphi v}dv = \frac{\varphi}{r+\pi+\varphi} \qquad \text{(A14)}$$

put n=π=0.04, δ=0.08, ψ=0.16, τ=0.32,

Q=0.111, Δ=0.00111

- Correction Process:

  1) Estimate Q and Δ

  2) Correct estimate of future capital income taxes to account for their inclusion of taxes on old capital and generational timing of capital income taxes

  3) Allocate total 1989 taxes on new capital by age and sex

  4) project future capital income taxes by age and sex

  5) allocate to 1989 owners of capital as a one time tax payment the1989 capitalized value of the excess taxation of older capital

- Aggregate capital income tax revenue: 19.6% (capital share of net national product) of total federal, state, and local income taxes, plus federal, state, and local corporate taxes (excluding the profiles of the U.S. Federal Reserve System), plus estate taxes.
- Aggregate value of Capital: 5,488.8 trillion dollars

  Nonresidential equipment plus structures plus non-owner occupied housing owned by taxable investors (see Flow of Fund).
- Use SIPP profiles.

F. Including PV of Government Seigniorage

- The government collect equal to the real value of new money printed
- In holding this money, households forgo the nominal rate of return available on other assets.

- Attribute the burden of the acquisition of money balances as a payment to the government and the disposition of money balances as a transfer from the government.

  This has the effect of imputing a cost equal to the nominal interest rate on the holding money balances and also attributes to all current and future generations taken together a total fiscal burden equal to the PV of government receipt from printing money.

F. Including Excise Taxes

- Include state and local excise taxes and property taxes assessed on business.
- Use CES data for estimation of age-sex profile.

F. Including Residential Property Taxes

- Treat property taxes as excise taxes on home ownership and allocate these taxes by age and sex using an age-profile of relative house values.
- Use SIPP data.

I. Treatment of Social Security and Other Government Transfers

- Divide total government transfer payments excluding federal, state, and local civil service, railroad retirement, and veterans into 6 categories: OASDI (including Federal Supplementary Security Income); HI (Medicare); AFDC; General Welfare (including Medicare); UI; and Food Stamp (including WIC).
- Use SIPP data.
- The absolute average values are assumed to equal their respective 1989 values adjusted for growth, except for social security.
- Make a rough adjustments for the impact for the 1983 Social Security Amendments on future benefits of the baby boom and subsequent generations:

  1) 2-year delay of entitlement age

  2) subjecting an increasing share of social security benefits to federal income taxation.

I. Calculating PV of Government Consumption

- Decompose total 1990 government consumption expenditure into: (1) expenditure on those age 0-24 ($g_{y,s}$), 25-64, ($g_{m,s}$) and 65+ ($g_{o,s}$); and (2) non-age-specific expenditures (g_s).

$$GS = g_{y,s} P_{y,s} + g_{m,s} P_{m,s} + g_{o,s} P_{o,s} + g_s P_s \qquad (5)$$

- Treatment of durables

  Follow NIPA treatment of durables.

  NIPA treats expenditures on durables as current consumption.

K. Determining Government Net Wealth

- Government Wealth = Government net interest payments divided by addition of assumed real interest rate and assumed inflation rate.
- This approach makes GA and analysis of different generations' private budget constraints to be consistent with NIPA data, including total government deficit.

L. Determining Private Sector Wealth

- Use 1984 SIPP data
- Calculate the weighted average values of net wealth by age and sex of net wealth for 1984 and normalize these values by the weighted average value of net wealth of 40-year-old males.
- Distribute household wealth to the owner of that wealth, where ownership is indicated. In the case of married couples, allocate half of the household's total wealth to each spouse.
- Set future values of net wealth by age and sex equal to the 1989 values adjusted for growth.

M. Choice of Interest Rate

- If future flows to and from government were certain and riskless, it would be appropriate to use government's borrowing rate.
- If not, depends on what we mean by fiscal balance in the presence of uncertainty.

  - if we wish to consider the payments from future generations that we expect will be needed to provide fiscal balance, the government borrowing rate is correct.
  - if agents are risk averse, the receipts and spending (transfers) should be discounted by higher rate than government borrowing rate.

TABLE 1

Accounts for Age Zero and Future Male Generations (thousands of dollars)

Generation's age in 1989	g=0			g=.0075			g=.015		
	r=.05	r=.06	r=.07	r=.05	r=.06	r=.07	r=.05	r=.06	r=.07
0	78.9	57.6	42.8	102.0	73.7	54.1	132.5	94.9	69.0
5	98.8	75.3	58.3	123.4	93.2	71.4	154.9	116.0	88.0
10	122.8	97.5	78.5	148.3	116.8	93.2	180.0	140.7	111.3
15	151.4	125.2	104.8	176.9	145.3	120.7	207.7	169.4	139.6
20	174.8	150.0	130.0	198.3	169.1	145.6	225.8	191.4	163.7
25	198.4	174.8	155.2	220.1	193.0	170.5	244.9	213.8	188.0
30	198.9	179.2	162.2	216.7	194.5	175.5	236.4	211.6	190.3
35	189.5	173.9	160.2	203.0	186.0	171.0	217.6	199.2	182.7
40	178.7	167.1	156.4	188.5	176.2	164.8	198.7	185.8	173.7
45	156.9	149.8	142.8	162.6	155.4	148.3	168.1	161.1	153.9
50	114.6	112.2	109.5	116.1	114.1	111.7	117.1	115.7	113.7
55	69.4	70.7	71.4	67.8	69.7	70.9	65.6	68.3	70.0
60	18.1	21.7	24.7	14.8	18.9	22.4	10.9	15.8	19.7
65	−32.7	−28.8	−25.3	−36.2	−31.8	−28.0	−40.0	−35.2	−31.0
70	−43.4	−40.2	−37.4	−46.1	−42.7	−39.6	−49.1	−45.3	−42.0
75	−42.0	−39.7	−37.6	−43.9	−41.5	−39.3	−46.0	−43.4	−41.0
80	−35.9	−34.5	−33.1	−37.2	−35.6	−34.2	−38.4	−36.8	−35.3
85	−28.4	−27.6	−26.8	−29.0	−28.2	−27.4	−29.7	−28.8	−28.0
90	−1.5	−1.5	−1.5	−1.5	−1.5	−1.5	−1.5	−1.5	−1.5
Future generations	95.9	69.6	51.1	124.4	89.5	65.1	162.6	115.9	83.6

TABLE 2

Accounts for Age Zero and Future Female Generations (thousands of dollars)

Generation's age in 1989	g=0			g=.0075			g=.015		
	r=.05	r=.06	r=.07	r=.05	r=.06	r=.07	r=.05	r=.06	r=.07
0	38.9	28.7	21.4	49.5	36.4	27.0	63.0	46.3	34.2
5	49.1	38.1	29.8	60.2	46.5	36.2	73.7	56.9	44.1
10	63.2	51.2	41.8	74.8	60.4	49.1	88.5	71.4	57.8
15	73.3	61.9	52.6	83.9	70.7	59.8	96.0	80.9	68.2
20	87.9	76.9	67.5	97.9	85.5	74.8	108.7	95.0	83.1
25	93.1	83.5	75.1	101.4	91.0	81.7	110.0	99.1	89.0
30	92.5	84.8	77.7	98.8	90.9	83.3	105.0	97.1	89.3
35	88.1	82.6	77.2	92.2	86.9	81.5	95.8	91.1	85.8
40	78.8	75.8	72.4	80.6	78.2	75.1	81.6	80.2	77.6
45	62.9	62.7	61.7	62.1	62.9	62.6	60.3	62.4	62.9
50	40.3	43.0	44.6	37.2	41.0	43.4	32.8	38.1	41.6
55	10.5	15.6	19.5	5.4	11.7	16.5	−0.8	6.9	12.8
60	−23.9	−17.8	−12.7	−29.7	−22.5	−16.7	−36.3	−28.0	−21.2
65	−55.0	−49.1	−44.0	−60.3	−53.7	−48.0	−66.3	−58.8	−52.4
70	−61.2	−56.4	−52.0	−65.5	−60.2	−55.4	−70.2	−64.3	−59.1
75	−58.7	−55.1	−51.8	−61.8	−57.9	−54.4	−65.1	−60.9	−57.1
80	−51.3	−49.0	−46.8	−53.3	−50.8	−48.5	−55.3	−52.7	−50.3
85	−42.9	−41.7	−40.6	−43.9	−42.7	−41.5	−44.9	−43.6	−42.4
90	−7.4	−7.4	−7.4	−7.4	−7.4	−7.4	−7.4	−7.4	−7.4
Future generations	47.3	34.7	25.5	60.4	44.2	32.5	77.3	56.6	41.4

TABLE 3

Percentage Difference in Accounts of Age Zero and Future Generations

Interest rate	g=0	g=.0025	g=.005	g=.0075	g=.01	g=.0125	g=.015	g= .0175	g=.02
0.03	21.93	22.09	22.30	22.54	22.83	23.16	23.53	23.94	24.39
0.04	21.88	21.99	22.15	22.34	22.57	22.83	23.12	23.44	23.78
0.05	21.61	21.71	21.85	22.03	22.24	22.48	22.74	23.03	23.34
0.06	20.89	21.02	21.19	21.39	21.62	21.88	22.16	22.45	22.77
0.07	19.45	19.66	19.91	20.18	20.48	20.80	21.14	21.49	21.86
0.08	16.89	17.27	17.68	18.09	18.53	18.97	19.43	19.89	20.36
0.09	12.74	13.40	14.06	14.73	15.38	16.04	16.69	17.34	17.98
0.10	6.36	7.45	8.52	9.55	10.56	11.55	12.50	13.44	14.34

APPENDIX TABLE 1

The Composition of Male Generational Accounts (r=.06, g=.0075)

Present values of receipts and payments (thousands of dollars)

Genera-tion's age in 1989	Net payment	*Payments*						*Receipts*					
		Labor income taxes	FICA taxes	Excise taxes	Capital income taxes	Seignor-age	Property taxes	OASDI	HI	*Welfare* AFDC	*Welfare* General	UI	Food Stamps
0	73.7	24.8	26.5	22.9	9.5	0.0	1.6	4.5	1.1	0.3	4.4	1.0	0.3
5	93.2	31.8	34.0	26.3	12.2	0.1	2.0	5.5	1.5	0.4	4.3	1.2	0.4
10	116.8	40.8	43.6	29.8	15.6	0.1	2.6	6.7	1.9	0.5	4.6	1.6	0.5
15	145.3	52.2	55.8	32.8	20.0	0.1	3.3	8.1	2.4	0.6	5.1	2.0	0.7
20	169.1	61.9	66.2	33.9	24.8	0.1	4.1	9.5	2.9	0.7	5.3	2.4	0.8
25	193.0	70.3	75.1	35.8	32.4	0.1	5.3	12.0	3.8	0.9	5.6	2.6	0.9
30	194.5	69.6	74.4	34.2	38.4	0.1	6.1	14.3	4.6	0.8	5.4	2.3	0.9
35	186.0	65.2	69.7	32.0	43.8	0.0	6.9	17.2	5.7	0.6	5.2	2.0	0.8
40	176.2	60.9	65.1	30.5	49.8	0.0	7.6	21.9	7.4	0.5	5.3	1.8	0.7
45	155.4	54.4	58.1	28.7	54.2	0.0	7.8	29.8	10.0	0.4	5.5	1.5	0.6
50	114.1	42.1	45.0	24.4	52.1	0.0	7.1	37.1	12.4	0.3	5.4	1.1	0.5
55	69.7	31.0	33.2	20.8	48.7	0.0	6.6	47.9	16.0	0.2	5.4	0.7	0.4
60	18.9	20.2	21.5	17.9	44.1	0.0	6.1	62.6	22.0	0.1	5.6	0.3	0.3
65	−31.8	9.1	9.7	14.7	37.0	0.0	5.4	71.2	30.7	0.0	5.6	0.0	0.2
70	−42.7	4.0	4.3	11.9	29.3	0.0	4.5	61.9	29.6	0.0	4.9	0.0	0.2
75	−41.5	1.8	2.0	9.5	22.5	0.0	3.7	48.9	27.9	0.0	4.1	0.0	0.1
80	−35.6	0.6	0.6	7.5	17.2	0.0	3.0	36.9	24.4	0.0	3.0	0.0	0.1
85	−28.2	0.0	0.0	6.1	14.3	0.0	2.4	28.2	20.9	0.0	1.8	0.0	0.1
90	−1.5	0.0	0.0	1.2	6.7	0.0	0.5	5.4	4.2	0.0	0.2	0.0	0.0
Future generations	89.5												

APPENDIX TABLE 2

The Composition of Female Generational Accounts ($r=.06$, $g=.0075$)

Present values of receipts and payments (thousands of dollars)

Genera-on's age n 1989	Net payment	*Payments*						*Receipts*					
		Labor income taxes	FICA taxes	Excise taxes	Capital income taxes	Seignor-age	Property taxes	OASDI	HI	*Welfare* AFDC	*Welfare* General	UI	Food Stamps
0	36.4	14.0	14.9	20.2	3.5	0.0	2.1	5.0	1.5	2.3	7.8	0.4	1.3
5	46.5	17.7	18.9	23.0	4.5	0.0	2.6	6.1	1.9	2.9	7.2	0.6	1.7
10	60.4	23.3	24.9	27.2	5.9	0.1	3.5	7.5	2.5	3.8	7.8	0.7	2.2
15	70.7	28.1	30.1	29.0	7.2	0.1	4.2	8.6	3.0	4.6	8.2	0.9	2.6
20	85.5	34.8	37.2	32.2	9.3	0.0	5.4	10.9	3.9	5.2	9.2	1.1	3.3
25	91.0	36.3	38.8	33.2	11.7	0.0	6.5	13.1	4.8	4.5	9.0	1.1	3.0
30	90.9	35.1	37.5	33.1	14.9	0.0	7.4	15.7	6.1	3.5	8.5	1.0	2.4
35	86.9	32.9	35.2	32.1	18.3	0.0	8.1	18.6	7.7	2.5	8.2	0.9	1.9
40	78.2	29.7	31.7	30.1	21.4	0.0	8.6	21.9	9.8	1.7	7.8	0.7	1.4
45	62.9	25.4	27.2	27.4	23.8	0.0	8.9	27.0	12.6	1.0	7.6	0.6	1.0
50	41.0	20.4	21.8	24.2	25.0	0.0	8.9	34.0	16.3	0.6	7.3	0.4	0.7
55	11.7	14.9	15.9	20.8	24.9	0.0	8.7	43.9	21.3	0.2	7.2	0.3	0.5
60	−22.5	9.3	9.9	17.4	23.4	0.0	8.2	55.1	27.8	0.0	7.2	0.2	0.4
65	−53.7	4.8	5.1	14.2	20.8	0.0	7.6	61.2	37.4	0.0	7.2	0.1	0.4
70	−60.2	2.0	2.2	11.5	17.3	0.0	6.9	56.5	36.8	0.0	6.5	0.0	0.3
75	−57.9	0.7	0.7	9.1	13.2	0.0	6.0	47.4	34.5	0.0	5.5	0.0	0.3
80	−50.8	0.0	0.0	7.2	8.8	0.0	5.1	37.4	29.9	0.0	4.5	0.0	0.2
85	−42.7	0.0	0.0	5.8	4.5	0.0	4.2	28.7	24.7	0.0	3.6	0.0	0.2
90	−7.4	0.0	0.0	1.0	0.4	0.0	0.7	4.7	4.2	0.0	0.6	0.0	0.0
ure enerations	44.2												