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**CONSTRUCTION OF GENERATIONAL  
ACCOUNTING FOR INDIA**

**M.R. Narayana  
Institute for Social and Economic Change  
Bangalore 560072, India**

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# Key motivations

- India's public finance is characterized by huge deficits, as measured by Revenue Deficit, Fiscal Deficit and Primary Deficit.
- Financing of these deficits by public borrowings or debt have implications on long term economic growth (e.g. through changes savings and investments) and intergenerational equity (e.g. through changes in consumption)
  - Debt-financed deficits also raise the question of sustainability of fiscal policy (including in the context of population ageing).
  - By constructing a GA for India, the above issues, among others, are expected to be resolved to draw implications for sustainable fiscal policies.

## Special motivation

- Comparability of results between NTA and GA (e.g. GA's net tax payments by elderly in current generation) and NTA's net public transfers to elderly).

# Recent trends in deficits (% of GDP)

(includes Central and State but not local governments)

Year	Gross fiscal deficit	Gross primary deficit	Revenue deficit
2000-01	9.51	3.57	6.60
2001-02	9.94	3.69	6.99
2002-03	9.57	3.09	6.64
2003-04	8.51	2.07	5.79
2004-05	<b>7.24</b>	<b>1.31</b>	<b>3.54</b>
2005-06	6.49	0.96	2.69
2006-07	5.37	-0.01	1.29
2007-08	4.09	-1.12	0.19
2008-09	8.47	3.39	4.31
2009-10	9.54	4.59	5.74
2010-11	7.32	2.66	3.82

# Debt indicators (% of GDP)

## (Central plus State governments)

Year	Domestic liabilities of the Centre	External Liabilities of the Centre	Total Liabilities of the Centre	Total Liabilities of the States	Combined Domestic Liabilities of the Centre & States	Combined Total Liabilities of the Centre & States
2000-01	52.45	3.14	55.58	28.26	67.46	70.59
2001-02	56.82	3.14	59.96	30.31	72.91	76.05
2002-03	61.09	2.43	63.52	32.04	77.86	80.29
2003-04	61.37	1.67	63.05	32.79	79.42	81.09
2004-05	<b>59.64</b>	<b>1.88</b>	<b>61.51</b>	<b>31.28</b>	<b>76.68</b>	<b>78.55</b>
2005-06	58.66	2.55	61.21	31.08	74.89	77.44
2006-07	56.73	2.39	59.12	28.92	71.70	74.10
2007-08	54.66	2.25	56.90	26.64	69.18	71.43
2008-09	54.39	2.20	56.59	26.34	69.90	72.11
2009-10	51.54	2.13	53.68	25.01	66.99	69.13
2010-11	48.03	2.06	50.09	23.11	62.85	64.91

## Tax-GDP ratios

Year	Direct taxes	Indirect taxes	Total taxes
2001-02	4	10	14
2002-03	4	10	14
2003-04	5	10	15
2004-05	5	10	15
2005-06	6	12	18
2006-07	7	12	20
2007-08	8	12	20
2008-09	8	11	19
2009-10	8	10	18
2010-11	7	10	18

## Policy relevance

The Fiscal Responsibility and Budget Management Act 2003

The Act provides for the responsibility of the Central Government, among others, to

- ensure inter-generational equity in fiscal management and macroeconomic stability by achieving sufficient revenue surplus; and
- Prudent debt management consistent with fiscal sustainability through limits on borrowings, debt and deficits of the Central Government.
- Thus, construction and analysis of GA is useful to evaluate the objectives of the Act.

# The standard GA model

- Familiar in the GA literature – based on constancy of age-sex specific tax and transfer profiles.
- First step is to calculate the net tax payments of current generation on the current fiscal policy
- Second step is to calculate the collective tax payments of future generation (treated as one generation) as a residual, given values of other components of inter-temporal budget constraint.
- Third step is to calculate the Generational Imbalance (GI). If GI is positive, it implies that lifetime net tax payments of the future generation (needed to maintain long term budgetary balance) is larger than that of current generation (on the basis of current fiscal policy). Thus, current fiscal policy is not sustainable. To restore budgetary the long term budgetary balance, tax burden should be raised sometime in future (Auerbach and Chun).
- GI is an analytical and empirical measure of sustainability of current fiscal policy.
- GA provides estimates of required current and future tax-transfer adjustments. This is useful for design of fiscal sustainability policies in actual economies.

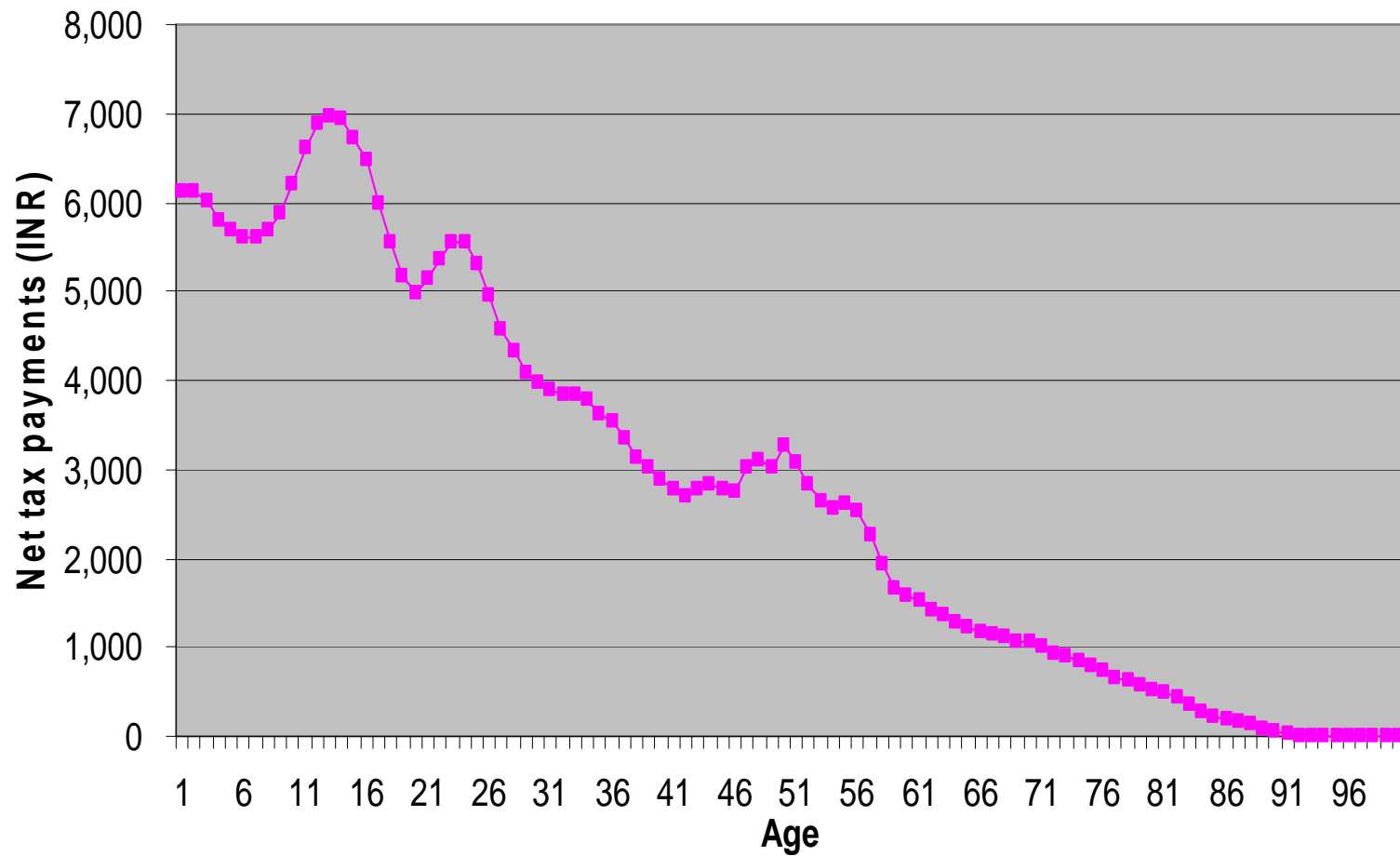
## Presentation of results

- Estimates of net tax payments of current generation, future generation and generational imbalance
- Composition of net tax payments of current generation by transfers and taxes



Age	Net tax payments - Total	Composition of Generational Accounts								
		Transfers				Taxes				
		Education	Health	Civilian pensions	Poverty & social security	Personal Income tax	Corporation tax	Other direct taxes	Indirect taxes	Non-tax revenues
0	6,116	-1,049	-517	-1,436	-161	665	1,219	72	4,864	2,458
5	5,610	-1,019	-458	-1,303	-155	639	1,171	67	4,403	2,265
10	6,610	-1,075	-516	-1,499	-189	776	1,422	77	4,994	2,621
15	6,465	-808	-476	-1,445	-196	777	1,446	73	4,603	2,490
20	5,143	-353	-354	-1,130	-167	623	1,204	56	3,364	1,900
25	4,945	-1	-310	-1,005	-169	584	1,193	51	2,886	1,717
30	3,892	-1	-244	-814	-152	462	1,022	41	2,205	1,373
35	3,539	-1	-217	-748	-155	405	980	37	1,971	1,266
40	2,772	-1	-167	-597	-137	300	796	30	1,544	1,005
45	2,757	-1	-163	-606	-157	270	828	30	1,536	1,019
50	3,063	0	-181	-691	-207	257	985	35	1,702	1,164
55	2,532	0	-152	-631	-215	163	905	30	1,418	1,014
60	1,531	0	-96	-441	-165	60	607	20	891	656
65	1,180	0	-78	-391	-143	35	495	16	721	526
70	1,007	0	-73	-390	-134	25	437	14	658	470
75	732	0	-56	-307	-97	14	330	11	491	346
80	499	0	-44	-229	-72	8	228	8	361	240
85	195	0	-27	-125	-43	3	67	3	221	96
90	29	0	-6	-24	-6	0	4	0	52	9
Future generation		184620								
Generational imbalance		2919								

**Figure 1: Estimates of Generational Account, India, 2004-05**



## Select remarks

- Net tax payments of current generations are positive including for elderly. This result is consistent with the NTA results in Narayana (2011).
- $GI > 0$ . This implies that current fiscal policy is not sustainable. This needs to be reexamined for two reasons: (a) Present difficulties in measuring net wealth of the government by value of asset minus explicit debt. (b) Forecasted budget surplus is positive by using Tim Miller's Budget Forecasting Model [Narayana (2011), this Conference].
- How to ensure that  $(r)$  is higher than  $(g)$  in GA?
- Required changes in current and future tax-transfer policies to be determined to achieve fiscal sustainability in future. This work will be continued based on refined estimates of GA for India.

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