Construction of India's National Transfers Accounts: Estimation of Life Cycle Deficit, 1999-00

M.R. Narayana

L. Ladusingh

21 August 2006

Economic structure of India

India is a federal, mixed, and open economy

Education, health, social security, and other social sectors are in the Concurrent List of Indian Constitution

Education: Primary (8 years, from age 6) , secondary (4 years), and tertiary (depends on types and levels) stage; Public, private, and mixed sectors

Health: Curative and preventive – Public health and family welfare programs: Public, private, and mixed sectors; modern and Indian system of medicines

Social security: Universal and targeted – Public sponsored and supported

Database

National income – Central Statistical Organisation

National sample survey: consumption expenditure, and employment (income) and unemployment

Share of public expenditure, 1999-00

Items of expenditure	Percent of total public expenditure	Percent of GDP at market prices
Total government spending	100.00	26.70
Education	12.22	3.26
Health	4.91	1.31
Pension	7.16	1.91
Poverty and other social services	2.60	0.69
Government services	51.83	13.84
Debt servicing	21.28	5.68

Composition of aggregate controls

1. Aggregate labour income

Compensation of employees + (2/3) of mixed income of unorganised sector + compensation of employees from Rest of World (ROW)

2. Aggregate private consumption =

Private [education consumption + health consumption + capital consumption + consumption other] – total indirect taxes – private consumption of durable goods

3. Aggregate public consumption =

Public [education consumption + health consumption + capital consumption + consumption other]

Data sources for estimation of aggregate controls and their age allocations

Using the NTA's guidelines, aggregate controls are estimated by using India's National Income Statistics, 1999-00.

Age allocation of different components of aggregate consumption are estimated by using the sector-specific databases and household consumer expenditure and employment surveys by the National Sample Survey Organisation.

All databases are official and available in the public domain

Estimated values of aggregate controls are as follows

Estimated Aggregate Controls
(Rs. in crore at current prices:
1 crore=10 million): Exchange rate: US$1=Rs.43.33

Variable	Public	Private	Total
AGGREGATE LABOUR INCOME	NA	NA	1082348
Compensation of employees	NA	NA	582357
(2/3) of mixed income of unorganised sector	NA	NA	499345
Compensation of employees from ROW	NA	NA	646
AGGREGATE CONSUMPTION	271679	941888	1213567
Education	32774	26996	59770
Health	12671	84359	97030
Capital	71871	84554	156425
Others	154363	745979	900342
Total indirect taxes	NA	213719	213719
Private consumption of durable goods	NA	125949	125949

Allocation rule for Aggregate labour income

Allocated according to the age profiles of wages and salaries of employed persons in the National Sample Survey of Employment and Unemployment Survey of India, 1999-00.

Survey data comprised non-reported values for self-employed household persons in agricultural sector. These zero values were replaced by the average value of wages and salaries of all workers in their respective sample districts.

Allocation rule for education consumption

Allocation of private education consumption

Allocated by applying the regression technique, and by using age profile of private (out-of-pocket) education expenditure by household persons in the National Sample Survey (55th Round) of Consumer Expenditure in India, 1999-00.

Allocation of public education consumption

Using the combined revenue expenditure of Education and non-Education Departments in the Central and State Government, share of public education consumption is estimated by levels of education (i.e. primary education, secondary education, higher education, and training and adult education). Enrolment in public (or government) education institutions is estimated by applying the National Sample Survey data on attendance by levels of education. Using the estimated expenditure shares and enrolment, total public education consumption is estimated by levels of education and allocated by their age groups.

Allocation rule for health consumption

Allocation of private health consumption

Not estimated by using the regression technique

Allocated by applying the age profile of private health expenditure in the National Sample Survey (60th Round) of Morbidity, Health Care, and the Conditions of the Aged, 2004.

Allocation of public health consumption

Allocated by applying the age-specific mortality rates from the Sample Registration System, 1999-00.

Allocation rule for capital consumption

Allocation of private capital consumption

Allocated by the technique of Equivalence Scale

Allocation of public capital consumption

Allocated on per capita basis for the entire population

Allocation rule for consumption other

Allocation of private consumption other

Allocated by the technique of Equivalence Scale, along with the private capital consumption.

Allocation of public consumption other

Allocated on per capita basis for the entire population

Estimated Life Cycle Deficit for India, 1999-00

(Rs. in crore: 1 crore=10 million)
Exchange rate: US$1=Rs.43.33

Variables	Total	0-19	20-29	30-49	50-64	65+
Life Cycle Deficit	**39245**	**349120**	**12197**	**-267549**	**-81447**	**26924**
Total Consumption	**1121594**	**392310**	**225016**	**321465**	**119204**	**63597**
Private Consumption	**941889**	**308251**	**196329**	**282588**	**103171**	**51551**
Public Consumption	**179705**	**84059**	**28688**	**38878**	**16034**	**12046**
Income	**1082349**	**43190**	**212819**	**589015**	**200651**	**36674**

Main estimation results of Life Cycle Deficit

The results offer evidence for life cycle deficit for the age groups: 0-19 and 20-29 and above 65 years.

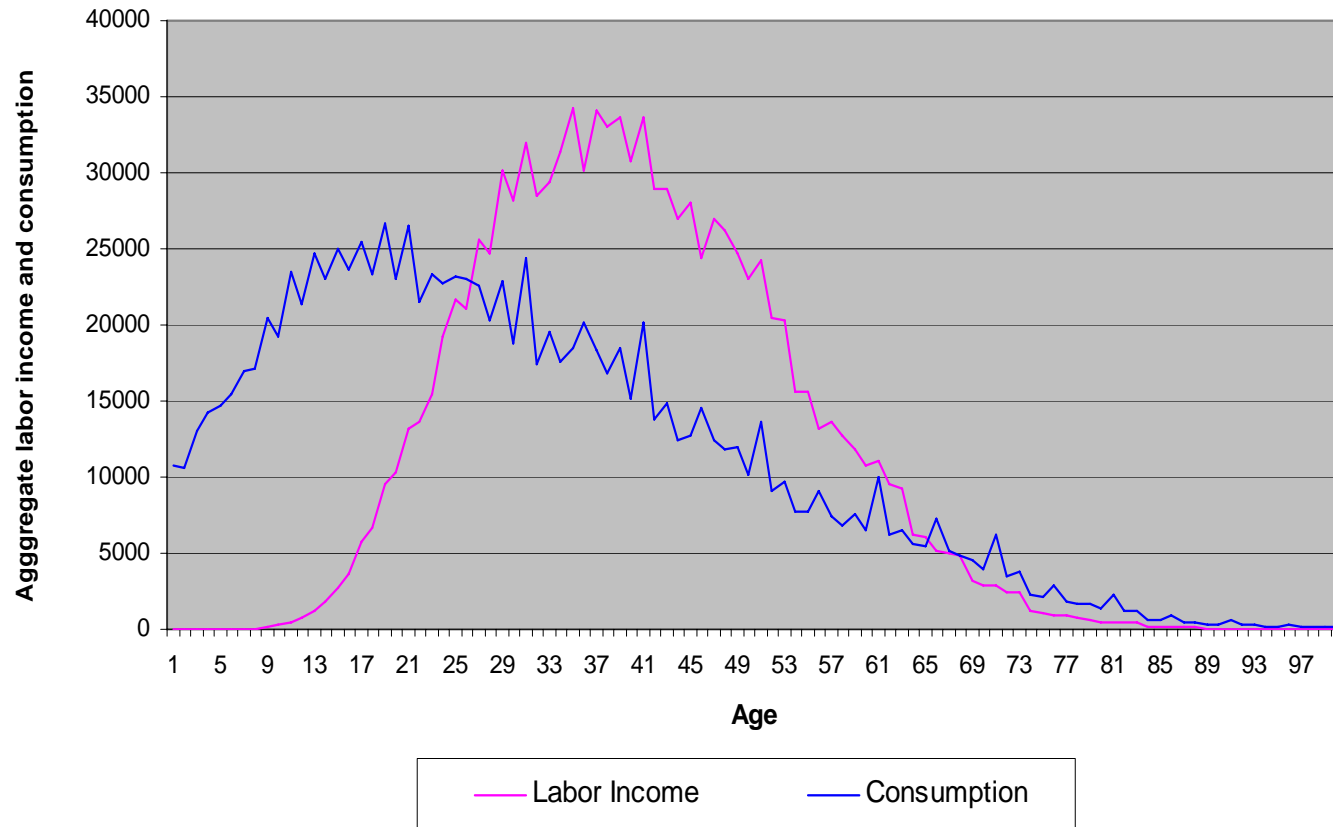Life cycle surplus is highest in the age group 30-49

Life cycle deficit is highest in the age group: 0-19

Most importantly, at the aggregate level (or for all age groups), lifecycle deficit is evident for India in 1999-00.

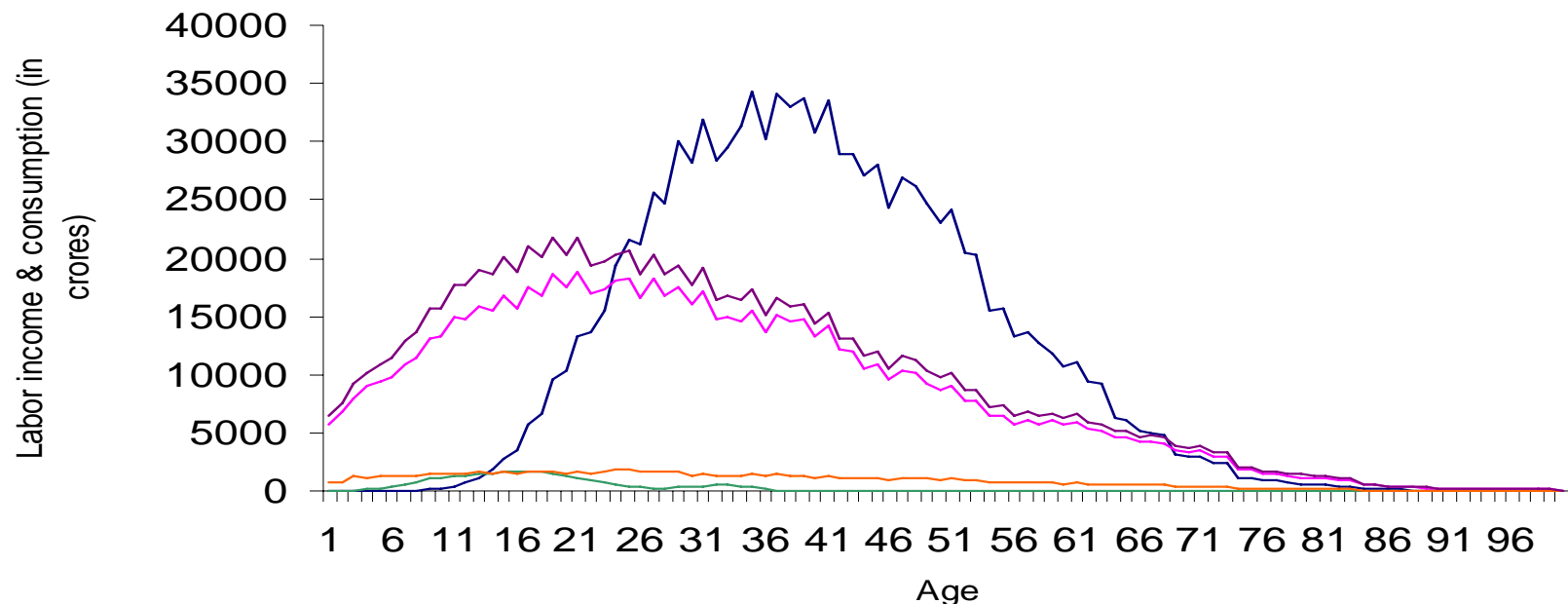All results including for per capita variables are graphically presented as follows.

Age allocation of aggregate labour income and aggregate consumption, India: 1999-2000

Figure 1: Agrregate Labor Income and Consumption India,1999-00

Age allocation of aggregate labour income and private consumption of education, health and other, India: 1999-2000
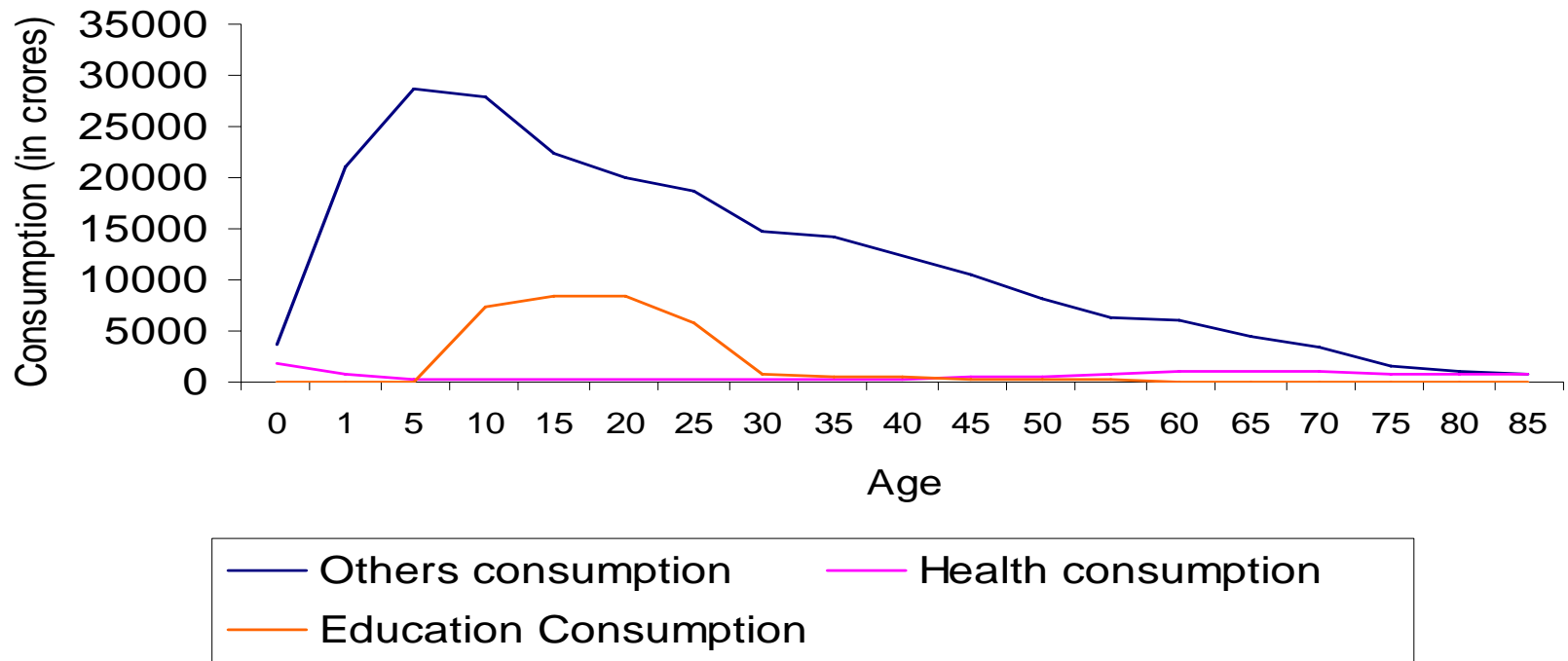

Figure 2: Age allocation of aggregate labor income, & private consumption of education, health & other, India: 1999-2000
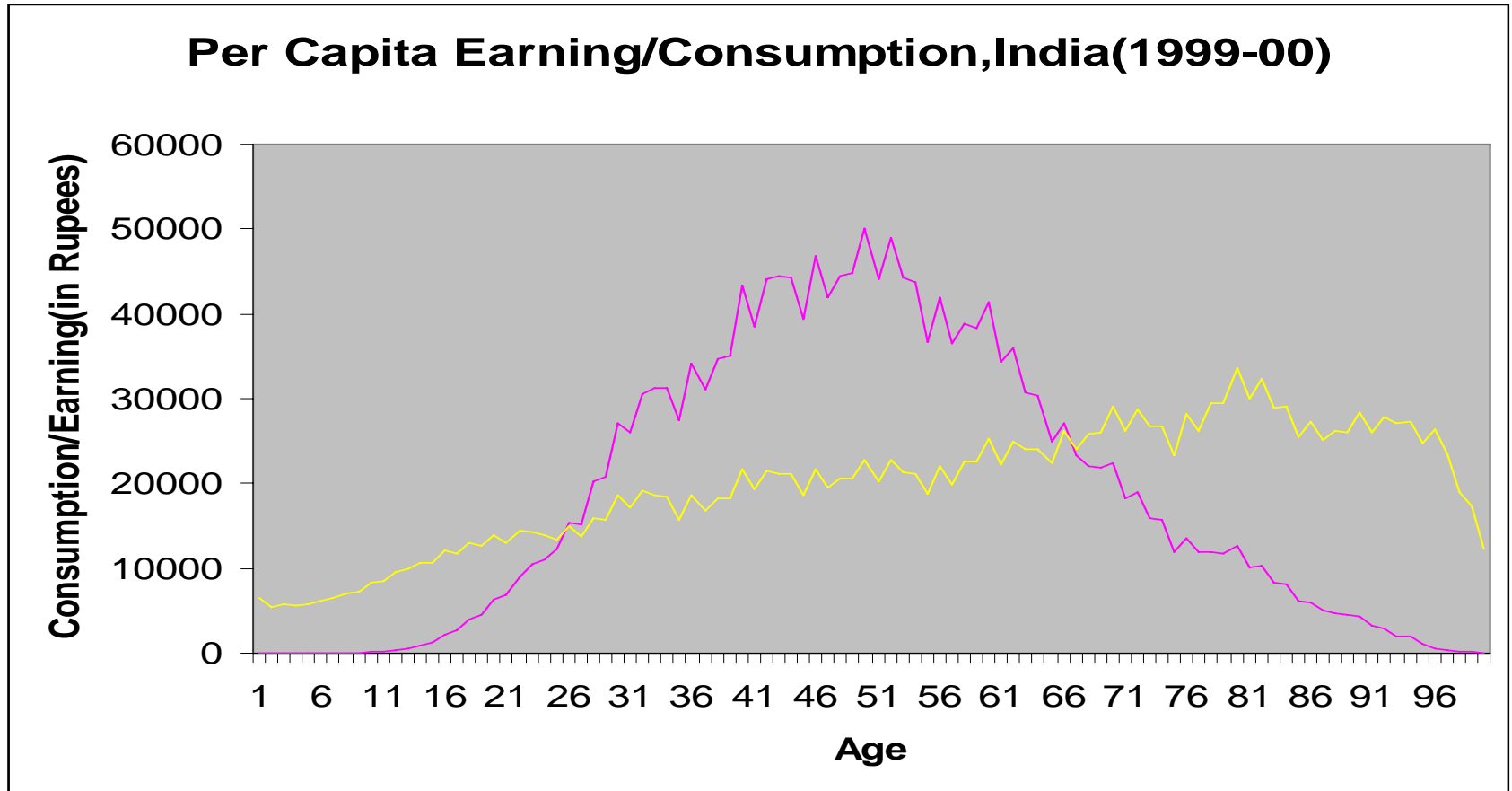
Age allocation of public consumption of education, health, and other, 1ndia: 1999-2000

Figure 3: Age allocation of aggregate public consumption of education, health, and capital and others in India: 1999-2000

Age allocation of per capita aggregate labour income and aggregate consumption, India: 1999-2000

Per Capita Earning/Consumption,India(1999-00)

Construction of India's National Transfers Accounts: Estimation of Public Transfers, 1999-00

M.R. Narayana

L. Ladusingh

21 August 2006

NTA's framework

- Public transfers are divided under inflows and outflows
- Inflows = gross investment by each age group
- Outflows = direct and indirect taxes paid
- Net transfers = inflows - outflows

Estimation of outflows

Estimation of aggregate controls

Direct and indirect tax revenues – Total and/or by components

Source of data

Indian Public Finance Statistics (annual, official and published database by the Ministry of Finance, Government of India)

Types of data

In general, three types of estimates are available for tax receipts: *Budget estimate* refers to current fiscal year. *Revised estimate* refers to a revision on the budget estimates. *Actual/Accounts* data refers to audited tax receipts. Throughout the estimations of India's NTA, data on all tax variables refer to accounts/actual data.

Total tax revenue by direct and indirect taxes in India: 1999-00
(Rs. In crore: 1 crore=10 million)

Name of the tax	Amount of tax revenue (Rs. in crore at current prices)	Percent to total tax revenue
A. Direct Taxes	60854.00	22.16
A1. Corporation tax	30692.29	11.18
A2. Taxes on income	25654.50	9.34
A3. Estate duty	-1.06	0.00
A4. Interest tax	1211.54	0.44
A5. Wealth tax	132.91	0.05
A6. Gift tax	-3.34	0.00
A7. Land revenue	1071.42	0.39
A8. Agricultural tax	150.72	0.05
A9. Hotel receipt tax	0.49	0.00
A10. Expenditure tax	271.63	0.10
A11. Others	1672.90	0.61
B. Indirect taxes	213718.79	77.84
B1. Customs	48419.57	17.63
B2. Union excise duties	61901.77	22.54
B3. Service tax	2128.00	0.78
B4. State excise duty	15187.10	5.53
B5. Stamp and registration fees	8589.02	3.13
B6. General sales tax	57811.15	21.05
B7. Taxes on vehicles	6188.12	2.25
B8. Entertainment tax	907.35	0.33
B9. Taxes on goods & passengers	2102.29	0.77
B10. Taxes & duty on electricity	3673.16	1.34
B11. Taxes on purchase of sugarcane (including cess on sugarcane)	4879.99	1.78
B12. Others	1931.27	0.70
Total tax revenues (Direct + Indirect tax revenue)	274572.79	100.00

Age allocation of direct and indirect taxes in India: 1999-00

No age profile of taxpayers of any of the direct and indirect taxes in India is available in the public domain or from the published sources. Thus, the following approximations are attempted.
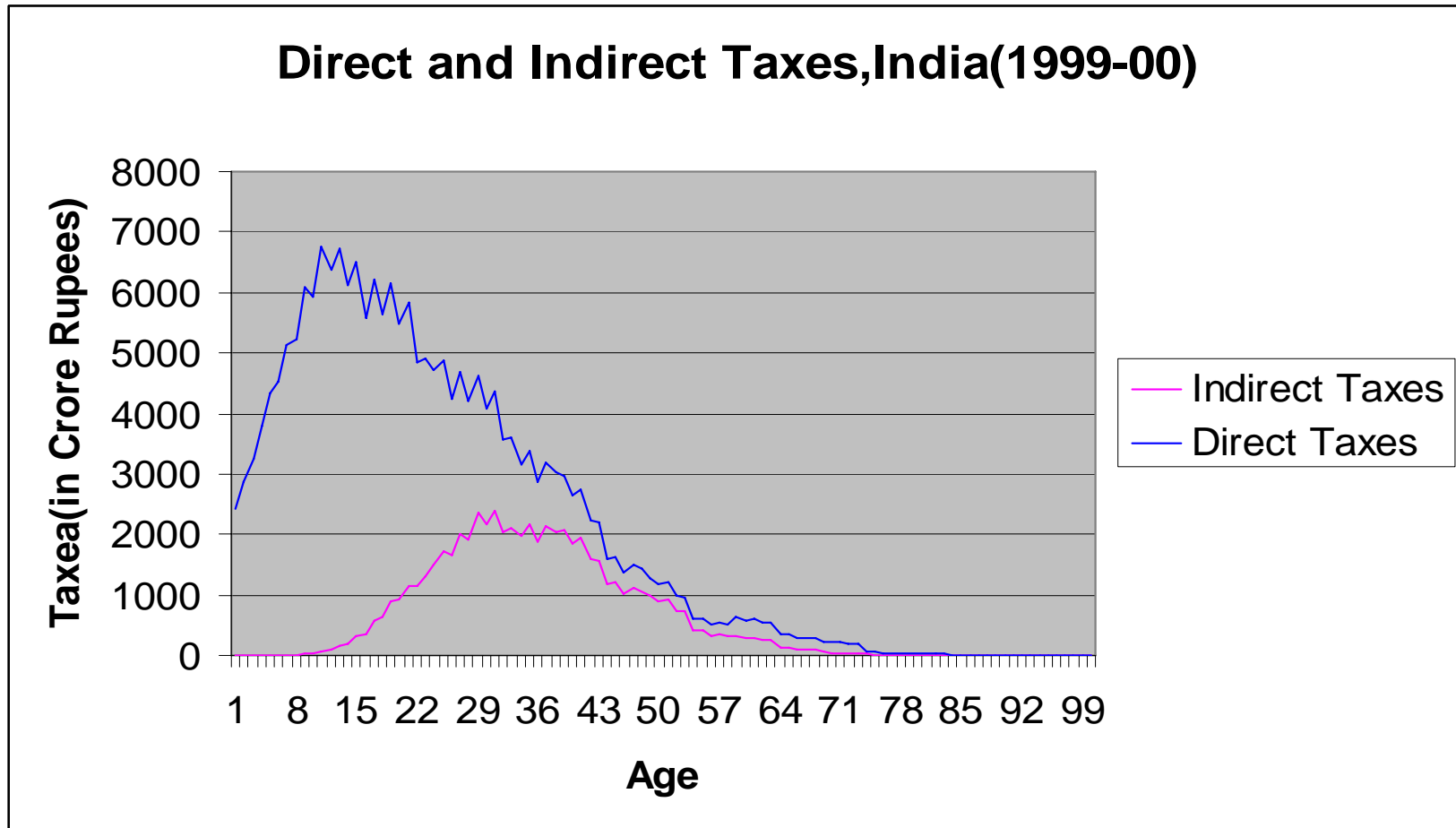
Allocation of direct taxes

Taxes paid are assumed to be proportional to income of household taxpayer. Thus, taxes are allocated by using the share of labour income (=wages and salaries) of the employed household persons in the National Sample Survey of Employment and Unemployment in India, 1999-00.

Allocation of indirect taxes

Allocated according to the proportion of total consumption by household persons in the National Sample Survey of Consumer Expenditure in India, 1999-00.

Age allocation of direct and indirect taxes, India: 1999-00

Direct and Indirect Taxes,India(1999-00)

Government initiatives

Three initiatives - a case for public goods consumption in kind

Universal programmes: Applicable for entire population, such as, education and literacy, healthcare services, water and sanitation facilities, vocational training

Targeted programmes: Applicable for specified:

Income (e.g. Public Distribution of System and Universal Health Insurance Scheme for households Below the Official Poverty Line)

Age groups (e.g. Mid-day Meal Programme for elementary education students, Integrated Child Development Scheme for pre-school children)

Spatial and social categories (e.g. special housing and employment generation programmes for rural, scheduled caste and scheduled tribes, and Below Poverty Line households)

Government initiatives

National Social Assistance Programme, 1995

Cash transfer programme - 100 percent sponsored by Central Government - Targeted for poor and destitutes - Provides security for old age, death of breadwinner, and maternity - Three componets:

(a) *National Old Age Pension Scheme*：Individual - More than 65 years; destitute with no source for livelihood; Rs.200 per month per beneficiary; Total expenditure Rs.7.3 million in 2005-06

(b) *National Family Benefit Scheme*：Households below the poverty line; 18－65 years; death of prime household breadwinner; lumpsum amount of Rs.10000 to a family; Coverage 0.211 million families with Rs.801 million in 2005-06

(c) *National Maternity Benefit Scheme*: Pregnant household women below the poverty line; above 19 years; lumpsum amount of Rs.500 per beneficiary; Coverage 1.152 million women in 2000-01.

Government initiatives

Social security for organised workers

Workers in organised sectors - public and private sectors - Public includes government and quasi-government – Private sector includees registered factories and companies - implemented through Labour Laws, such as, Employees State Insurance, Maternity Act, and Workmen Relief Act - Benefits include: Medical care, sickness and maternity leave with pay, retrenchment benefit, old age benefits (e.g. pension and provident fund), and compensation for injury

Social security for unorganised workers are introduced under the unorganised sector workers Social Security Scheme (2004) - Old Age Pension Scheme, Personal Accidendal Insurance, and Medical Insurance

Government initiatives

Welfare Funds
For specified industrial workers (e.g. mine workers) - Benefits include housing, medical care, and education for children - financed by cess on exported items (e.g. iron ore) - about 0.4 million workers are current beneficiaries

State Government initiatives

Major social security schemes include: old age pension, maternity benefits, pension for agricultural landless labourers and physically handicapped and destitute women, employment, and housing subsidy

Non-Government initiatives

Mainly by voluntary organisations, such as, Self Employed Women Association (SEWA) in Gujarath

General remarks

- Programmes and schemes are many, and divided under Central and, State Governments, and private sectors
- Programmes are to be separated by organised workers in public and private sectors, and by organised and unorganised workers in private sector
- Programme/scheme specific data is needed
- No consolidated data of all programmes/schemes at the national level
- Beneficiaries differ by programmes/schemes.
- Implications: (a) Aggregate security expenditure to be newly estimated. (b) Age allocation may have to be separated by programmes.

THANK YOU