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Understanding the role of Subsidies and Investments in Indian Agriculture

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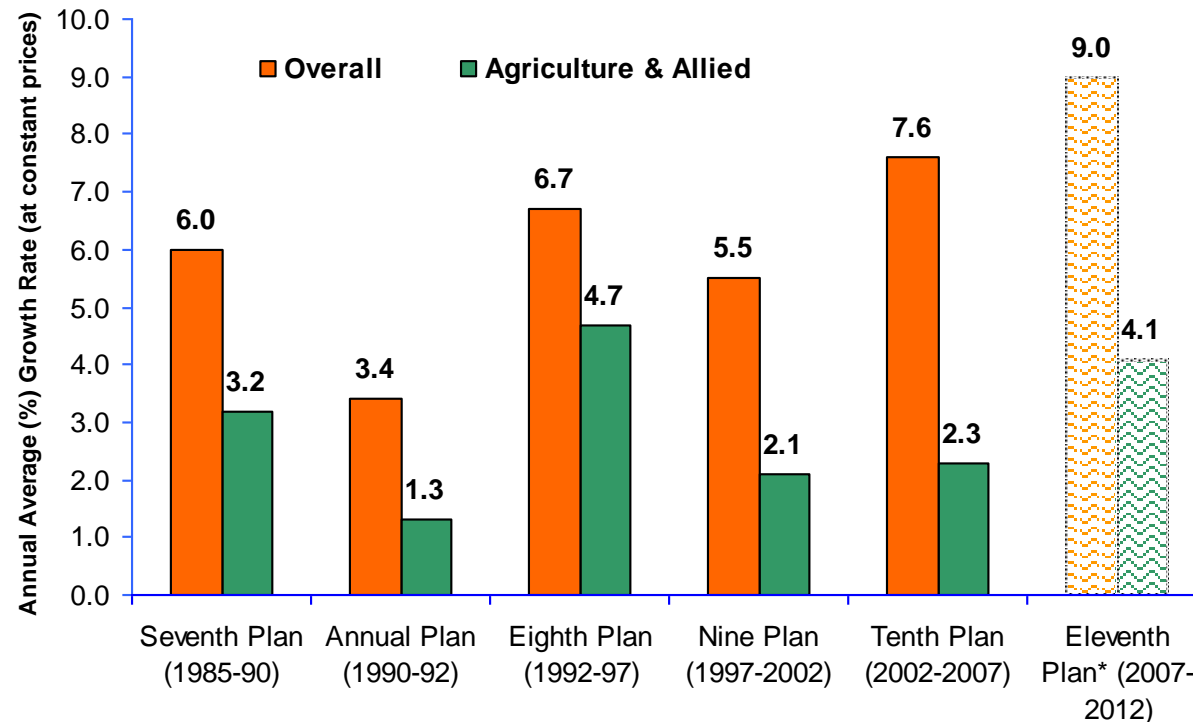
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Mumbai Media Forum on
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YMCA, Mumbai, March 26, 2007

Growth performance of Indian Agriculture:

Growth Rates in Agriculture and Overall GDP



Source: Economic Survey 2006-07, GOI. *Towards Faster and More Inclusive Growth: an Approach to the 11th FYP, December 2006, Planning Commission, GOI

Note: Growth rates prior to 2001 based on 1993-94 prices and from 2000-01 onwards based on new series at 1999-00 prices

Why have the growth rates in agriculture slumped?

- Various hypotheses, but no agreement
 - Falling public investments in agl.??
 - Or rising subsidies??
 - Or falling global prices after the east Asian crisis???
 - Or domestic supply bottlenecks ??
 - Or domestic demand constraints??
 - Or????

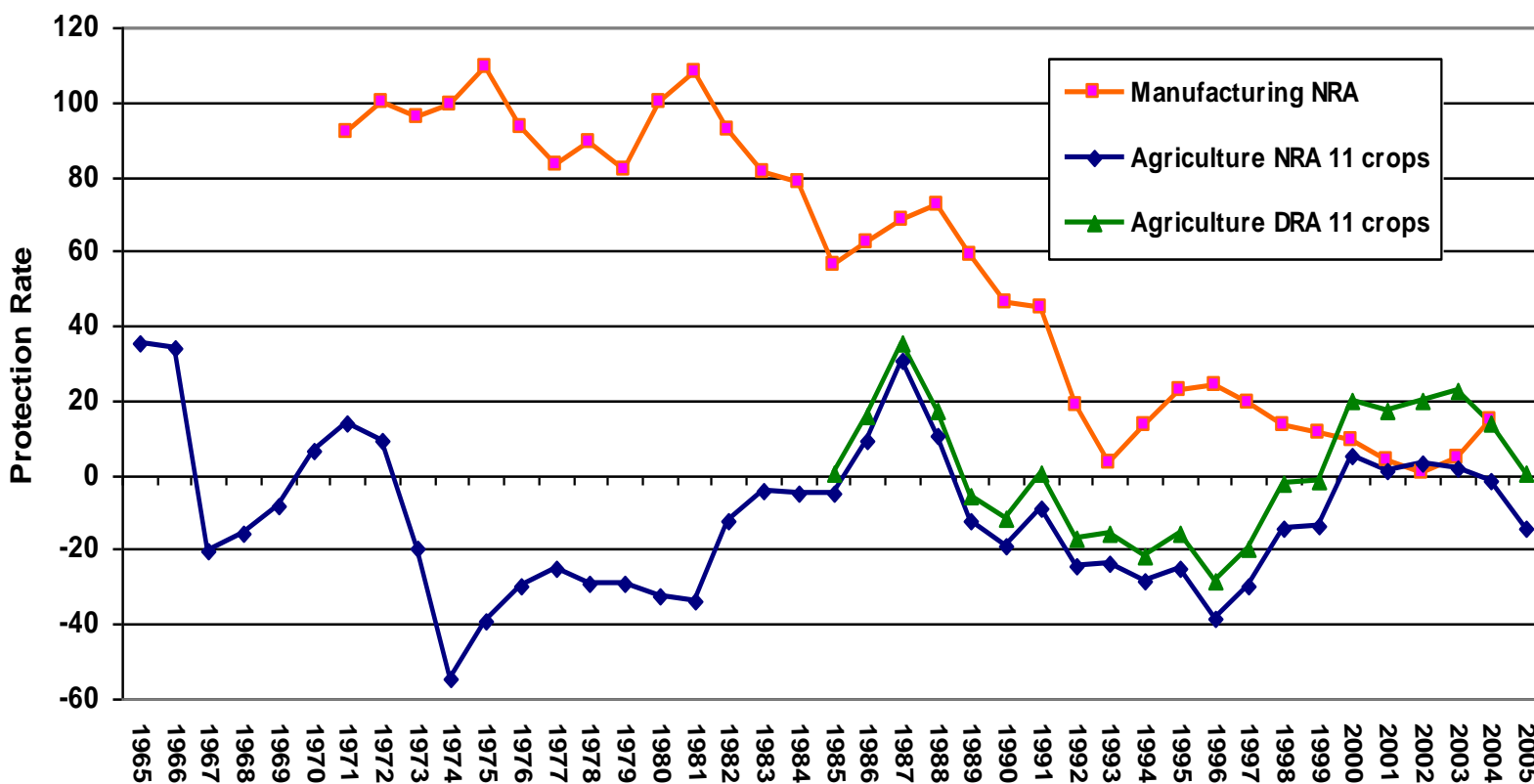
Understanding subsidies in Agl.

- Budgetary and economic subsidies
- While budgetary subsidies are often explicit and easy to estimate, economic subsidies are generally hidden and difficult to capture accurately.
- To know the real story, challenge is to go beyond budgetary subsidies (A government could be subsidizing through budget, but taxing through trade policy: one foot on the accelerator and another on the brake!)
 - (For details one may see Subsidy Syndrome in Indian Agriculture: Gulati-Narayanan, 2003, OUP)

Implicit Subsidization/taxation of AGRICULTURE VS MANUFACTURING: India 1965-2005

(Source: Pursell, Gulati, and Gupta, 2007 (forthcoming))

Fig 7
India 1965 to 2005: Agriculture versus Manufacturing Protection



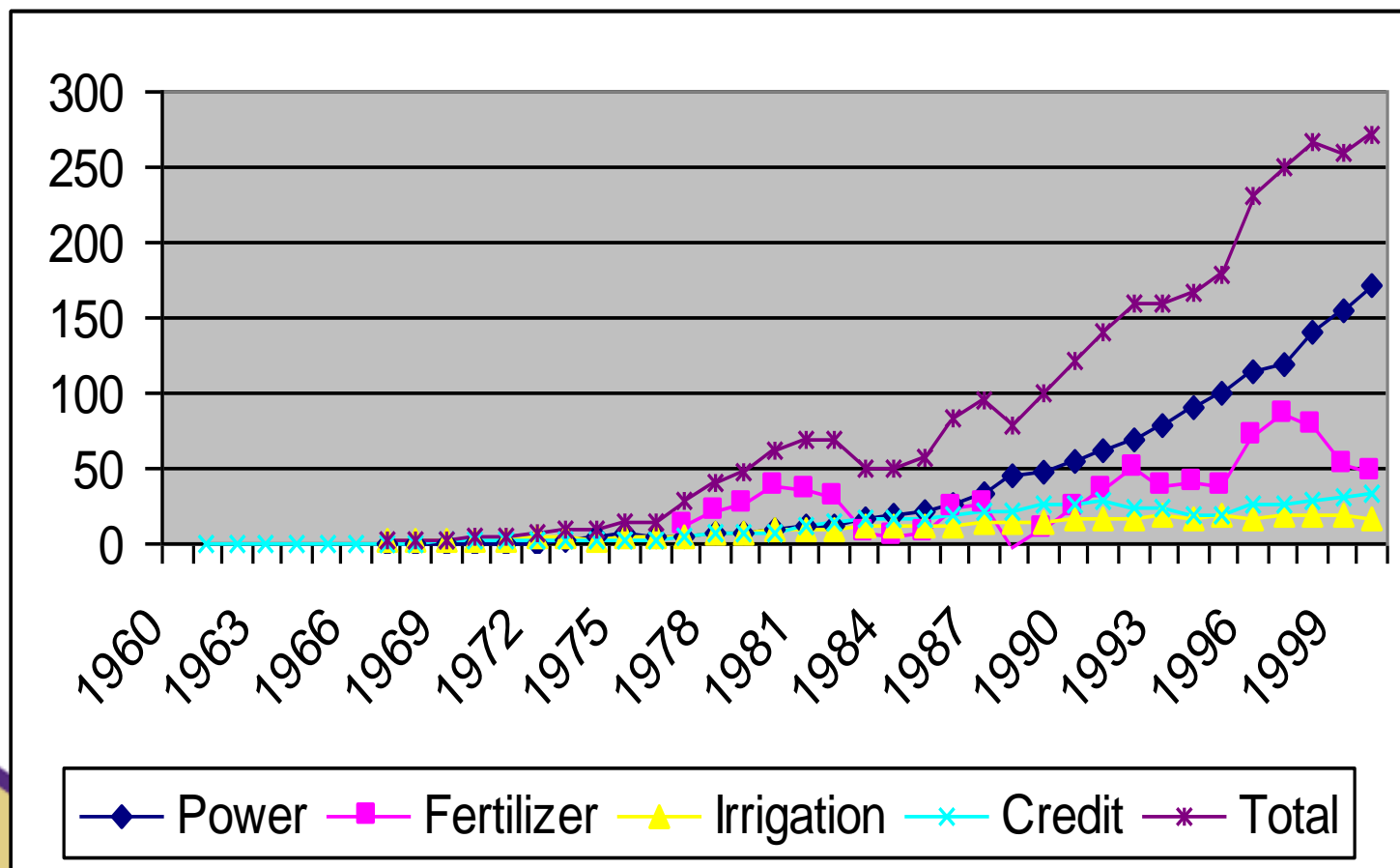
Estimating Input Subsidies

- **Fertilizers:** difference between import parity and what the farmers pay
- **Power:** difference between cost of providing power to all sectors and what is the revenue tariff from agl.
- **Irrigation:** difference between the O&M exp. and revenue from irrigation
- **Credit:** difference in the rates of interest between agl and other sectors and defaults in agl.

(No definition is perfect and we are open to alternative definitions!)

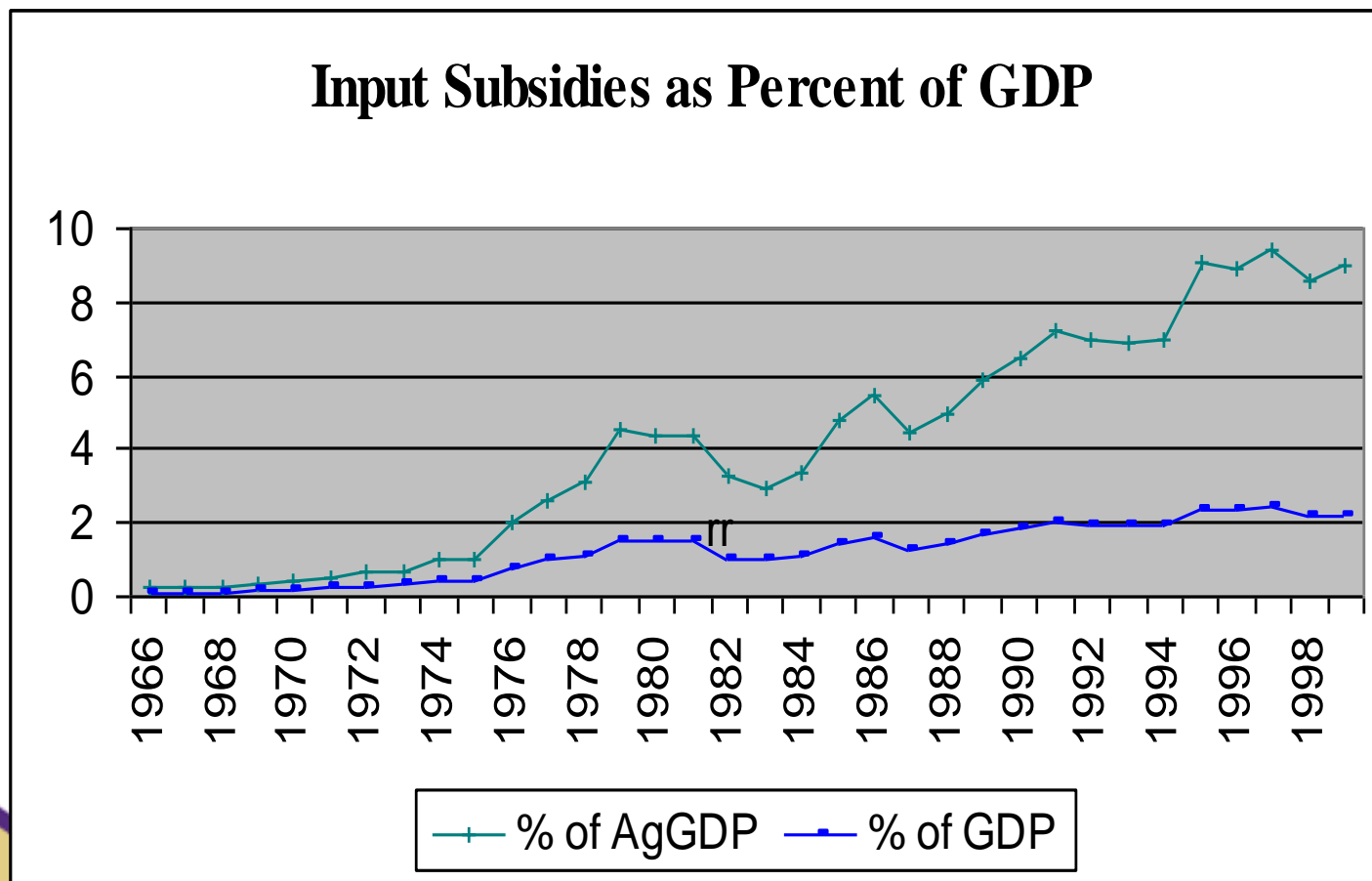
Trends in Input Subsidies (Billion Rps in 1993 price)

Source: Fan, Gulati, Thorat, 2007 (forthcoming)



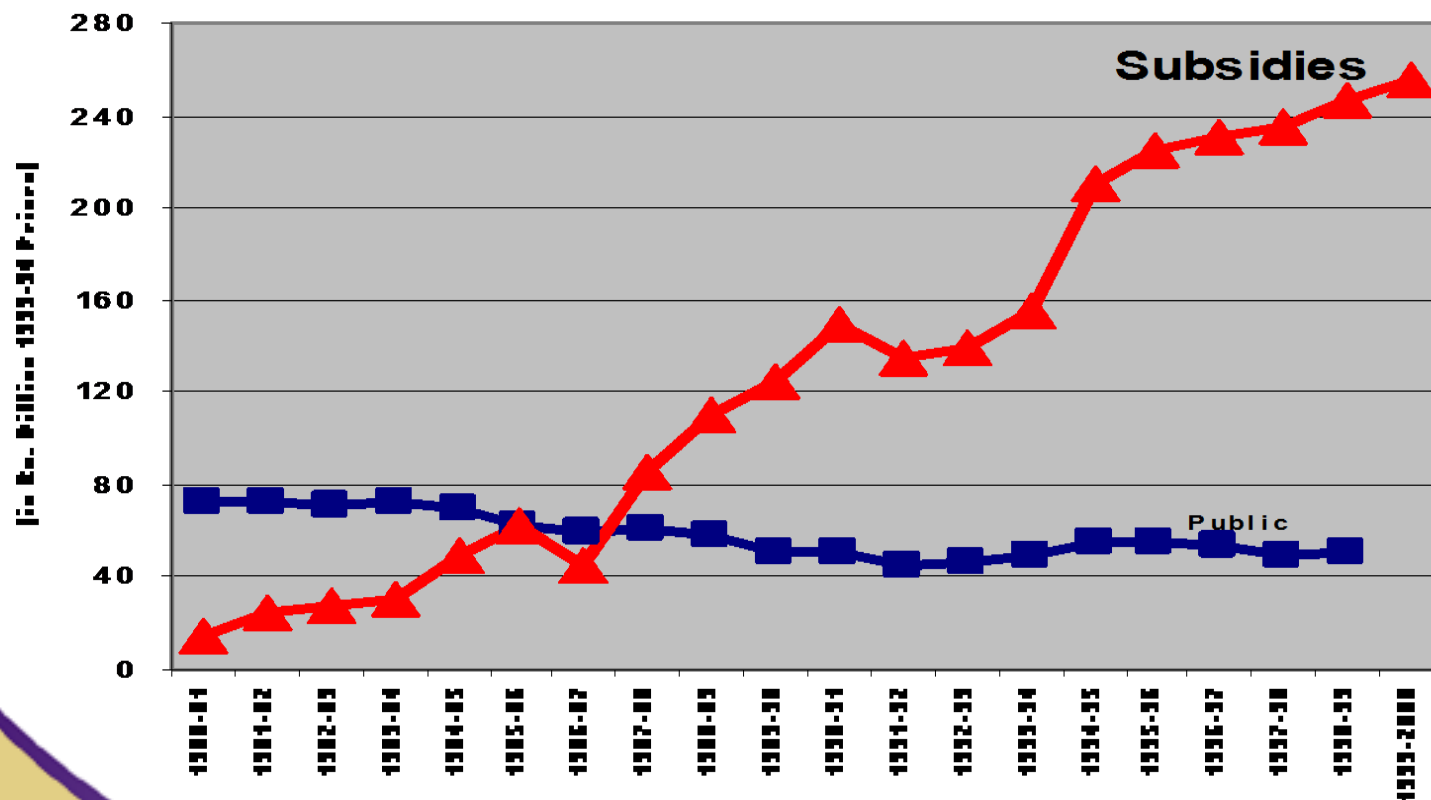
Input Subsidies and GDP

Source: Fan, Gulati and Thorat, 2007 (forthcoming)



Input subsidies (power, fer., irrigation) and public investments *in* agl. (NAS)

Source: Gulati and Narayanan, (2003)

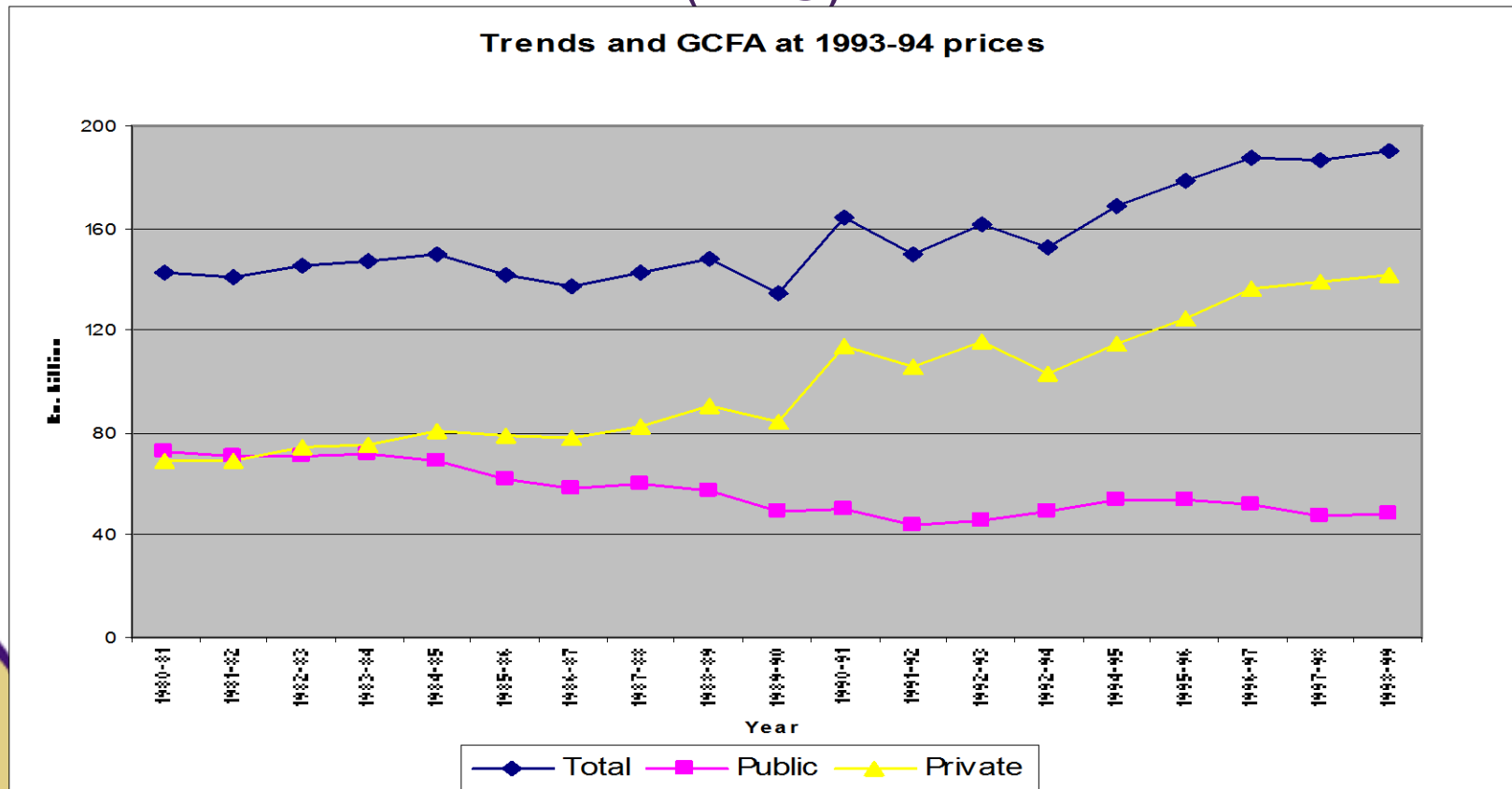


Public Investment

Understanding investments *in/for* agl.

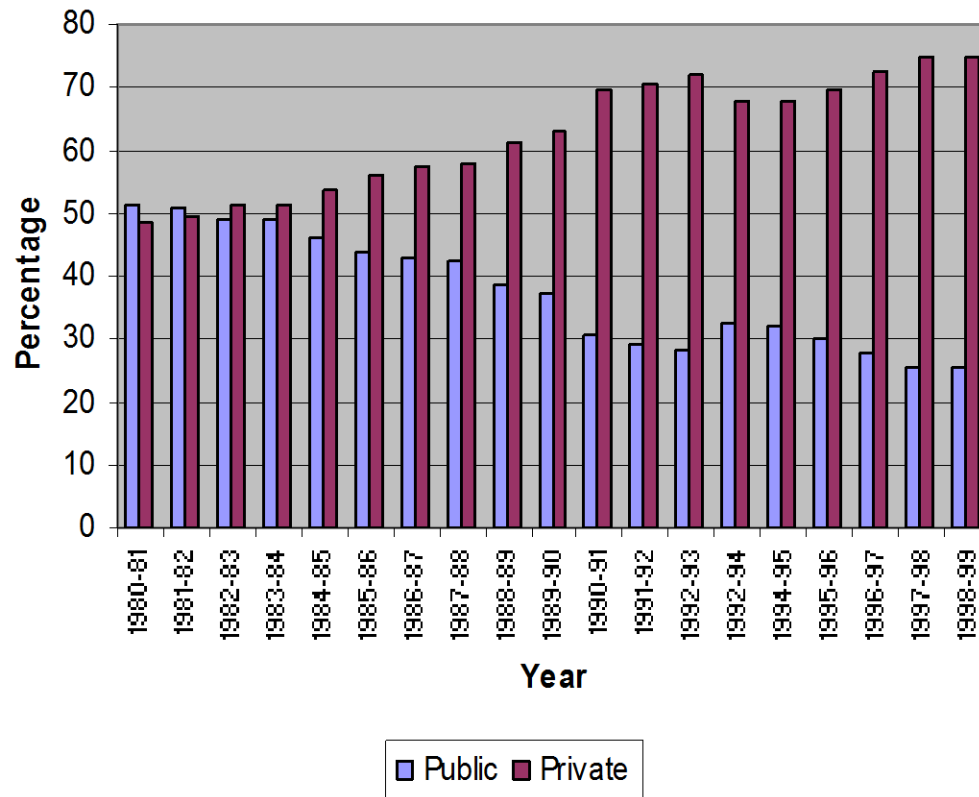
- National Accounts Statistics (NAS, CSO) defines GFCF *in* agl. as GCFA minus Changes in stocks
- By the type of institution
 - Public (government comm. Undertakings, 90% is irrigation)
 - Private corporate (plantations)
 - Private households (a variety of investments largely dominated by agl. Machinery, wells, etc.)

Trends in public and private sector investments *in* agl. (Rs billion at 1993 prices) (NAS)



Relative share of public and private investments *in* Agl. (NAS definition)

Share of Public and private sector in GCFA (at 1993-94 prices)



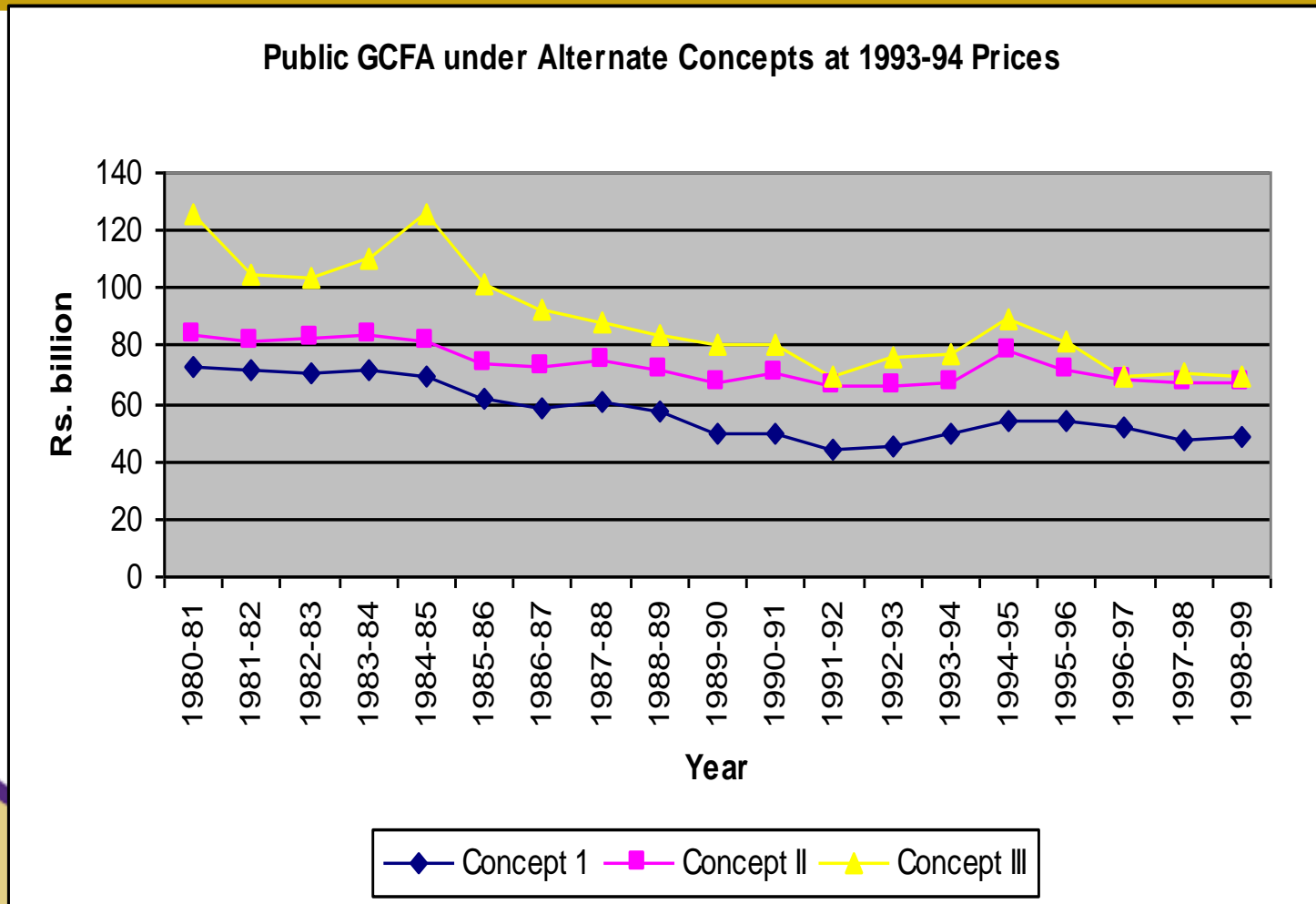
Agl. growth depends not only on investments *in* agl. but also *for* agl?

- Dantwala had spoken in the past on this issue and many tried to capture this
- But recently, few attempts to estimate public investment *for* agl:
 - Fan, Hazell and Haque (2000)
 - Ramesh Chand (2000)
 - Gulati and Bathla (2002)
 - GOI (2003) (DES, MOA Committee)

(Each one differs in scope and coverage)

Trends in public investment *for* agl.

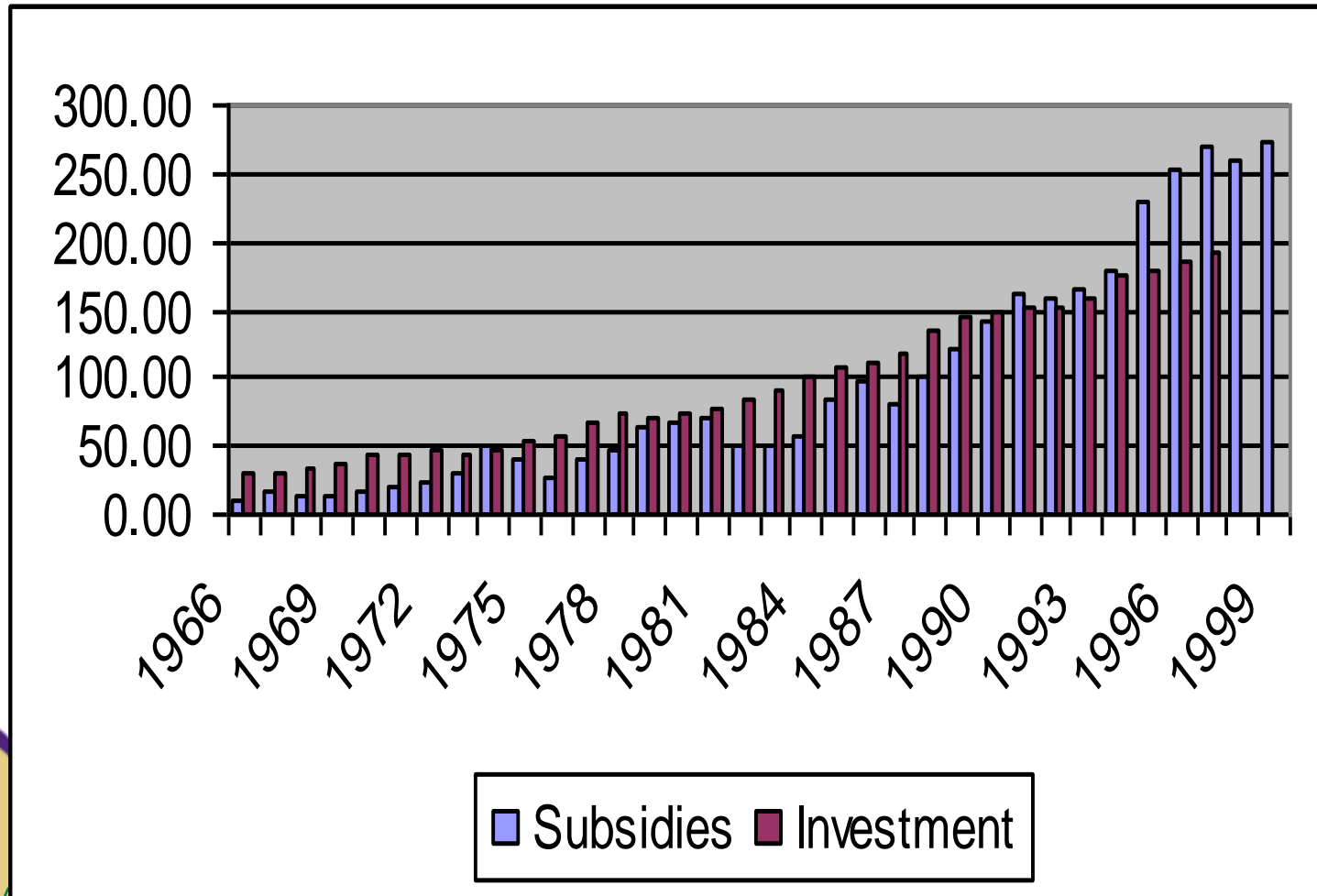
(alternate concepts: Gulati-Bathla, 2002)



Diversity in levels and trends of investments *for* agl.

- Except Fan et.al. (2000), all others show declining trend in public investments *for* agl., although their levels differ;
- In Fan et.al. (2000), if you include rural education, the trend is pulled somewhat upwards
(open to suggestions!)

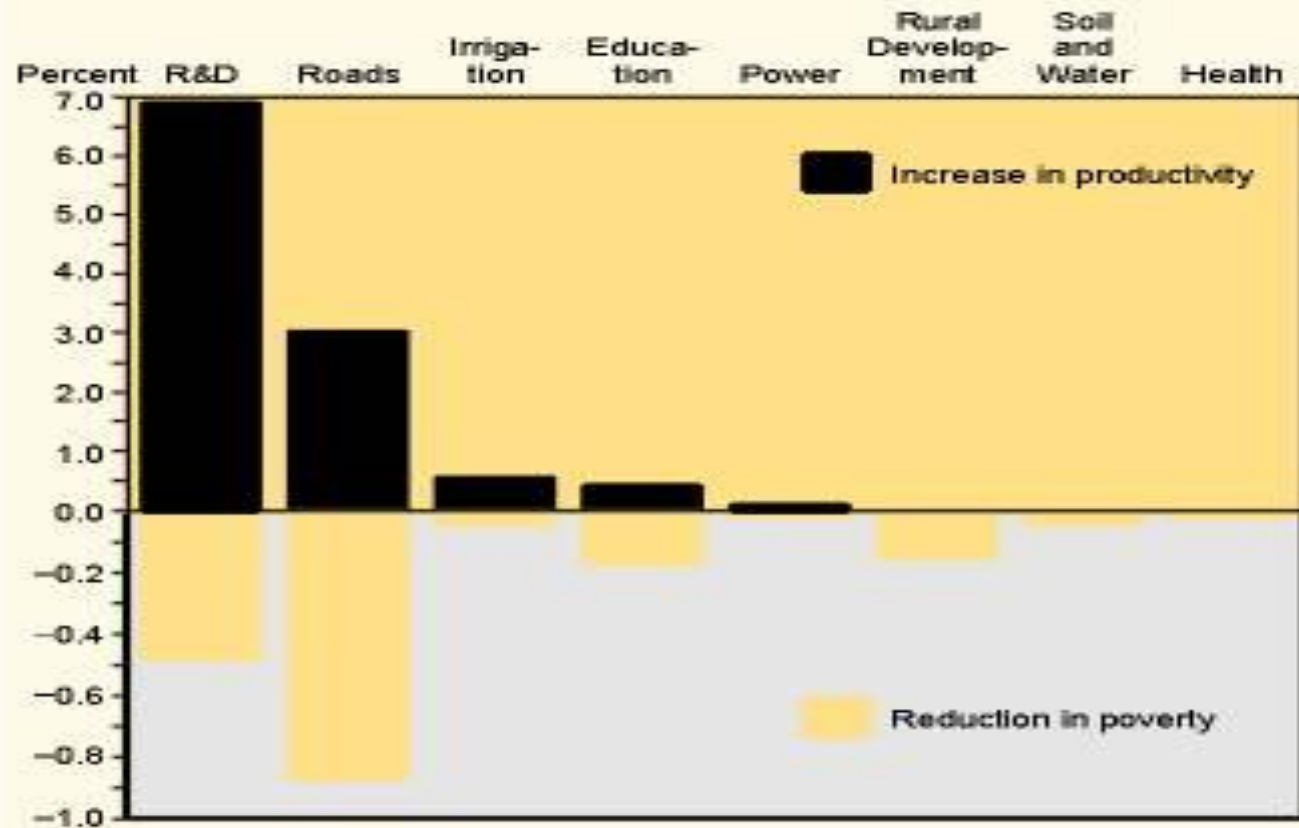
Input Subsidies and public investments *for agl.* (as per Fan, et.al. 2000) Rs. Billion at 1993 prices



Measuring the impact of public investment *for* agriculture? IFPRI Study (Fan, Hazell and Thorat, 1999)

Figure 2

Increases in growth of productivity and reduction in poverty as a result of additional government expenditure



Note: Based on spending of an additional Rs 100 billion in 1993 constant prices.

Returns in Ag GDP

Source: Fan, Gulati, and Thorat, 2007 (forthcoming)

		1960s	1970s	1980s	1990s
Returns in Agricultural GDP (Rps per Rps Spending)					
Roads		8.79	3.80	3.03	3.17
Education		5.97	7.88	3.88	1.53
Irrigation Investment		2.65	2.10	3.61	1.41
Irrigation Subsidies		2.24	1.22	2.28	n.s.
Fertilizer Subsidies		2.41	3.03	0.88	0.53
Power Subsidies		1.18	0.95	1.66	0.58
Credit Subsidies		3.86	1.68	5.2	0.89
Agricultural R&D		3.12	5.90	6.95	6.93

Returns in Poverty Reduction

Source: Fan, Gulati, and Thorat, 2007 (forthcoming)

		1960s	1970s	1980s	1990s
Number of Poor reduced per Million Rps Spending					
Roads		1272.29	1345.68	295.43	334.98
Education		411.03	468.65	447.21	108.75
Irrigation Investment		182.73	125.49	197.27	66.91
Irrigation Subsidies		149.11	67.51	113.50	n.s.
Fertilizer Subsidies		180.88	180.88	48.14	23.67
Power Subsidies		78.68	52.31	82.52	26.9
Credit Subsidies		256.6	92.54	258.51	41.73
Agricultural R&D		207.30	325.57	345.24	323.30

What does all this research imply?

- Raise investments and contain subsidies;
- Rationalizing each subsidy is a challenge: price reforms alone will not succeed.
- Institutional reforms are more critical and must go hand in hand with price reforms

What sort of institutional reforms?

- **Power:** Towards creating competition?
 - “Unbundling” as in power generation, transmission and distribution?
 - Two part tariff system with pre-paid electricity cards for the poor
- **Irrigation:** Involving WUAs as in canal irrigation and having Canal Regulatory Commission to bring transparency in investments
- **Fertilizers:** Abolishing RPS and opening up imports of urea
- **Credit:** Introducing NBFIs to reach small and marginal farmers

But the future of agriculture will depend upon a New Vision of Agri-system

Source: Gulati, 2007

A Vision of dynamic complete Agri-System, where farms are fragmenting while all other segments are scaling up fast

