ON THE RATIONALE OF SOCIAL SUPPORT/OPPOSITION TO INSTITUTIONAL REFORMS

A STUDY OF POWER SECTOR REFORMS (PSR) IN INDIAN STATES

- **Funded by the Government of Japan as the Outstanding Research Award (2004) of GDN**

Motivation:

- Why certain reforms easier to implement, but not others?
- India could undertake macroeconomic reforms, telecommunication reforms but not PSR
- Why is it so difficult to implement PSR in a number of Indian states?
- PSR is seen as a reason for the electoral debacle in a few Indian states
- However, Governments that privatised electricity utilities in two states were re-elected

Motivation: contd…

Those who oppose reforms argue that

- Reforms are driven by the needs of the rich
- Reforms are against the interest of the poor

How realistic is this argument?

Motivation: contd…

- Who gains and who loses from the reform?
- How does the distribution of gainers and losers affect the net social support to reform?
- How does the distribution affect the political willingness to reform?

Theoretical Relevance

- Recent focus on the distribution costs of reform on the political willingness to reform
- Lack of enough empirical studies carried out in a systematic manner
  - Difficulty of collecting comparable data
- Possibility of getting comparable data from the PSR in India

Some Arguments in Literature

- Role of median voter in blocking marginal cost pricing for power supply (Bernard and Roland, 1997).
- Reform negatively affected by unemployment and size of retirees and blue collar workers
  - And positively affected by the size of private sector and white collar workers (Fidrmuc, 2000)

  That part of PSR reform which benefits middle class was implemented in Kerala, but not others that cause losses to this class (Santhakumar, 2003)

The context:

- Public utilities (mostly state-owned) in power sector
  - single largest contributor of fiscal deficits in the country
- **Financial non-viability of SEBs**
  - **Provision of electricity at subsidised rates to residential and agricultural consumers**
  - **Inefficiencies of SEBs**

Context: Recent Reforms

- **Regulator (in most states)**
- **Unbundling, making Corporations, Privatisation of SEBs – only in plan but not implemented effectively in most states**
- Some reforms - **Electricity Act 2003; central govt. support linked to reforms**
- **`Threat of Privatisation' moderating the bargaining power of PSU employees**

The context: many more constraints

- Regulators not fully made use of
- Not many explicit steps to improve efficiency of SEBs
- Not much reduction in T&D loss
- Doubts on the effect of privatisation from the early experience of Delhi and Orissa
- Re-emergence of populism (free power to farmers) after recent elections

The focus of this study

- The reasons for making reforms relatively more difficult in some states than others
- Setting aside some variables
  - Role of industry and trade
  - Role of employees
  - Role of external environment

Focus on the losses and gains of households due to reforms

What is `reform'?

- Assume that financial viability is to be improved
  - Tariff should recover a greater part of the cost of supply
- Assume that the efficiency of the utilities to be improved as part of reform

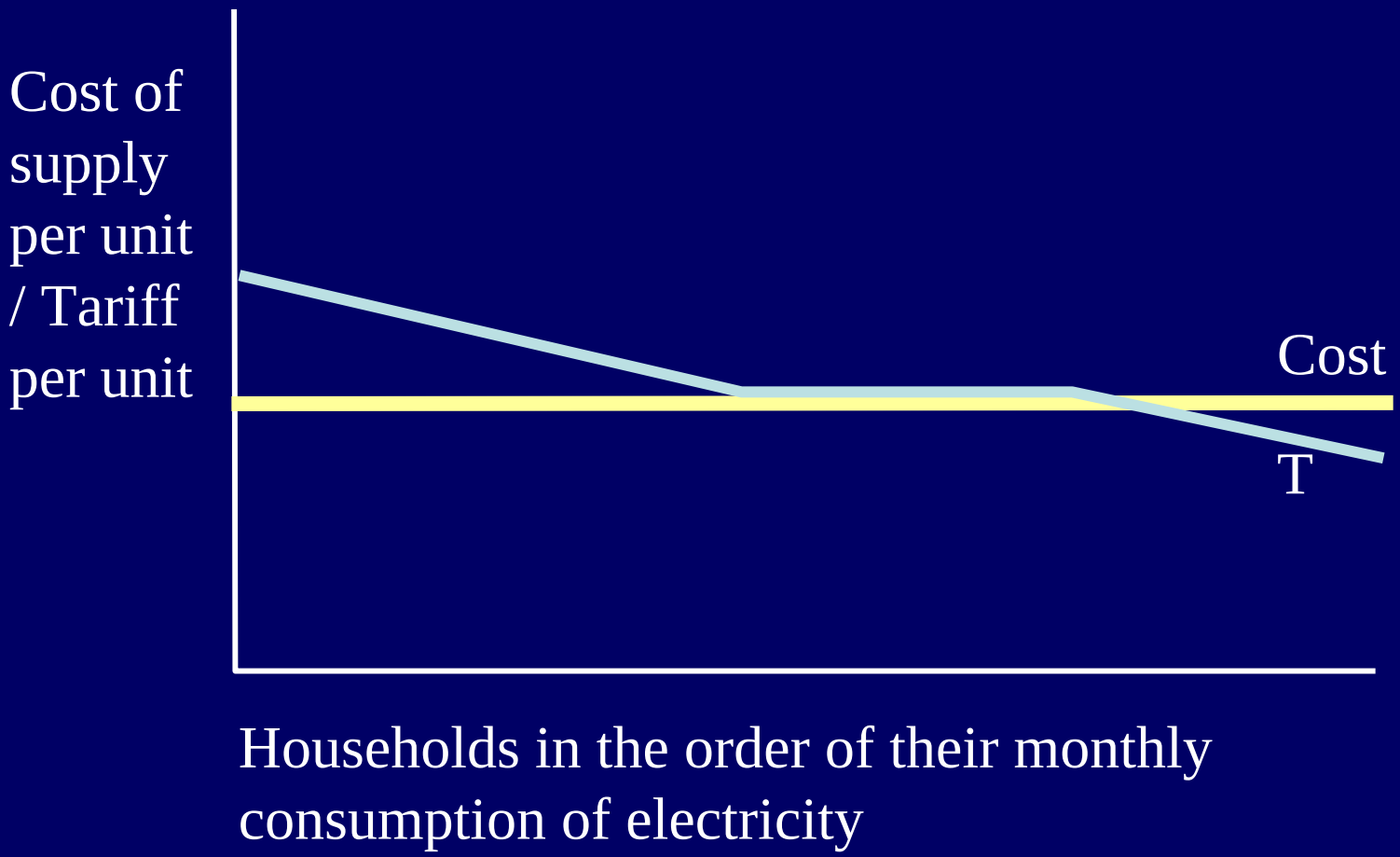
Losses and gains due to reform

- The subsidy consumers receive for electricity
- Loss due to the poor quality of electricity supply
- General loss on account of non-viability and inefficiency in power sector

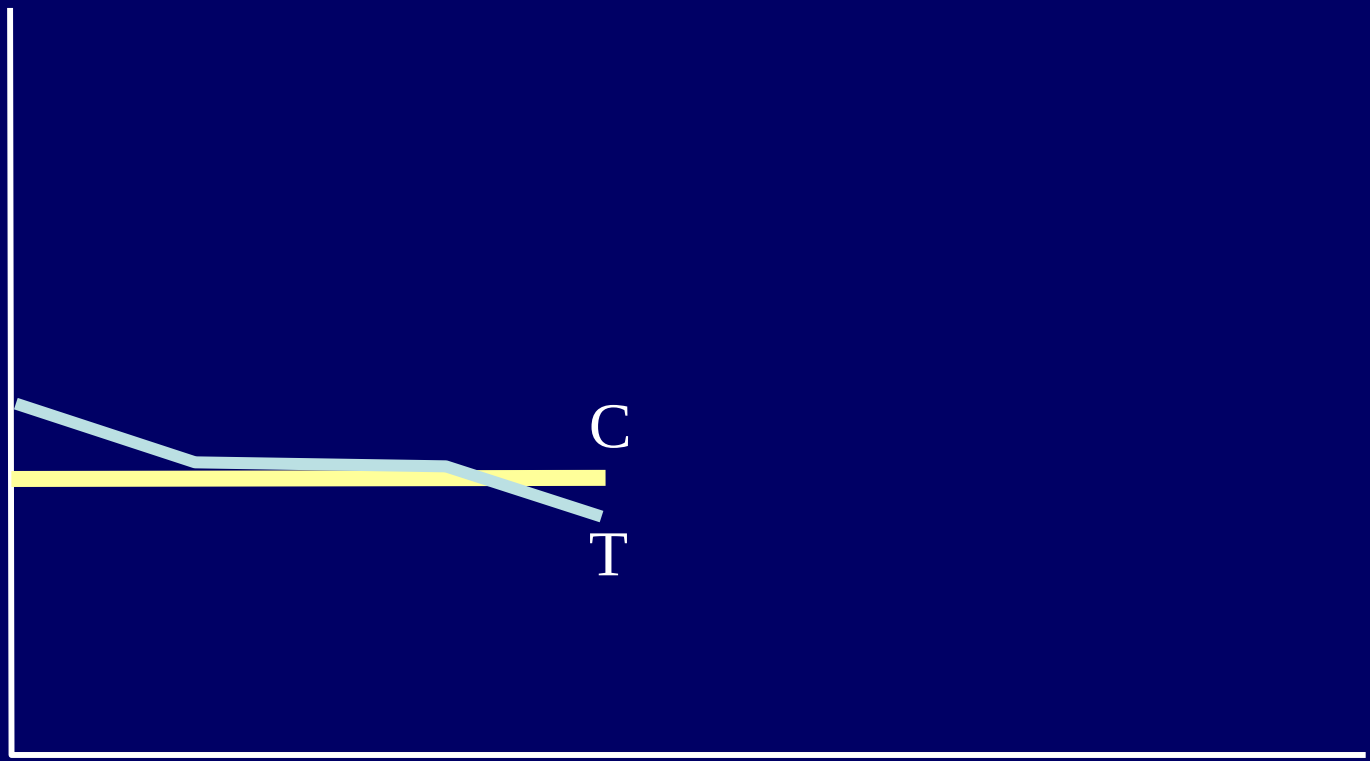
How does the distribution of losses / gains affect the social support to reform?

Hypotheses

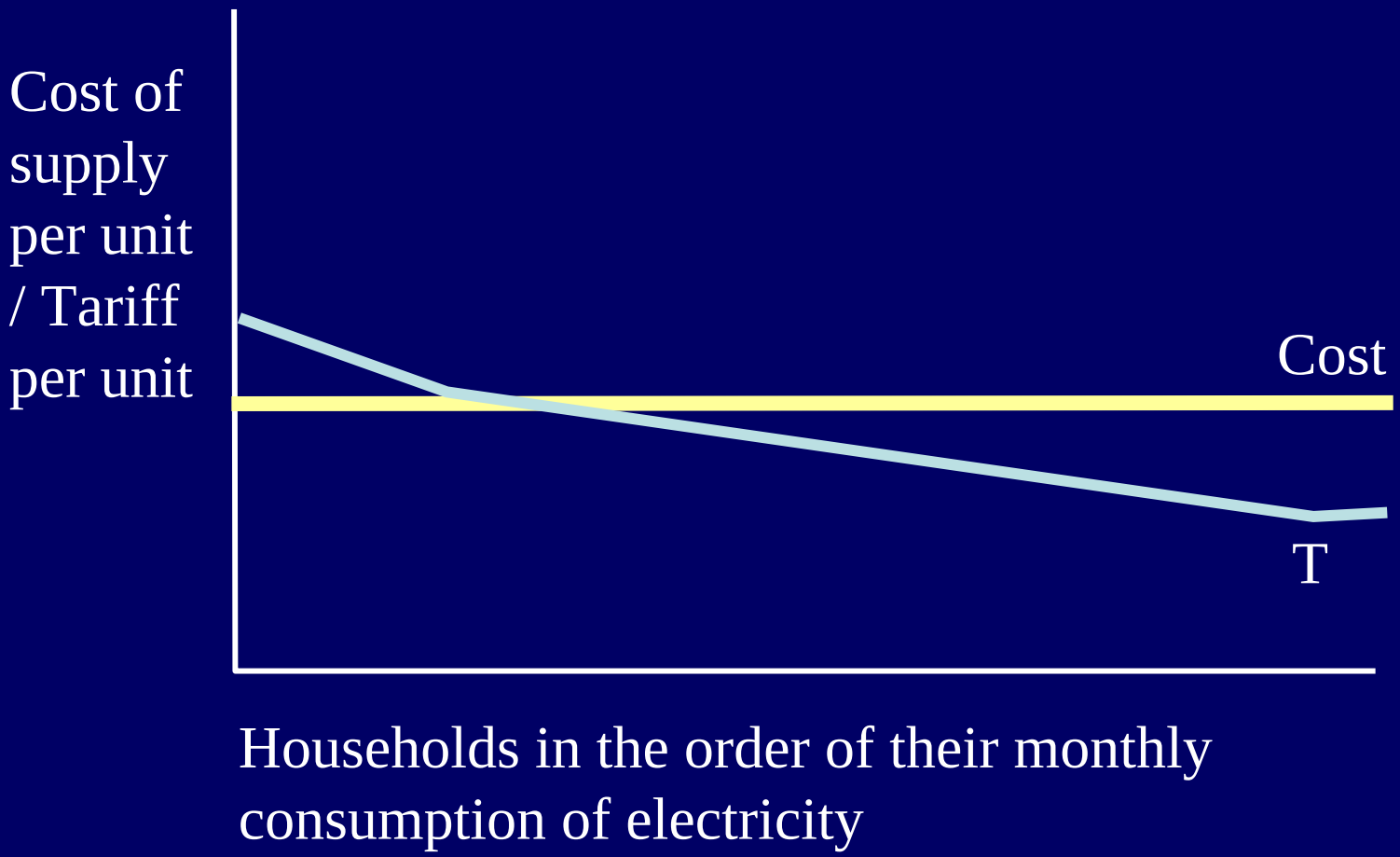
- **No opposition to tariff reform (TR) (issue of tariff reform does not arise)**
- **Support for efficiency reform (ER)**



- **Adequate support for TR**
- **Adequate support for ER**

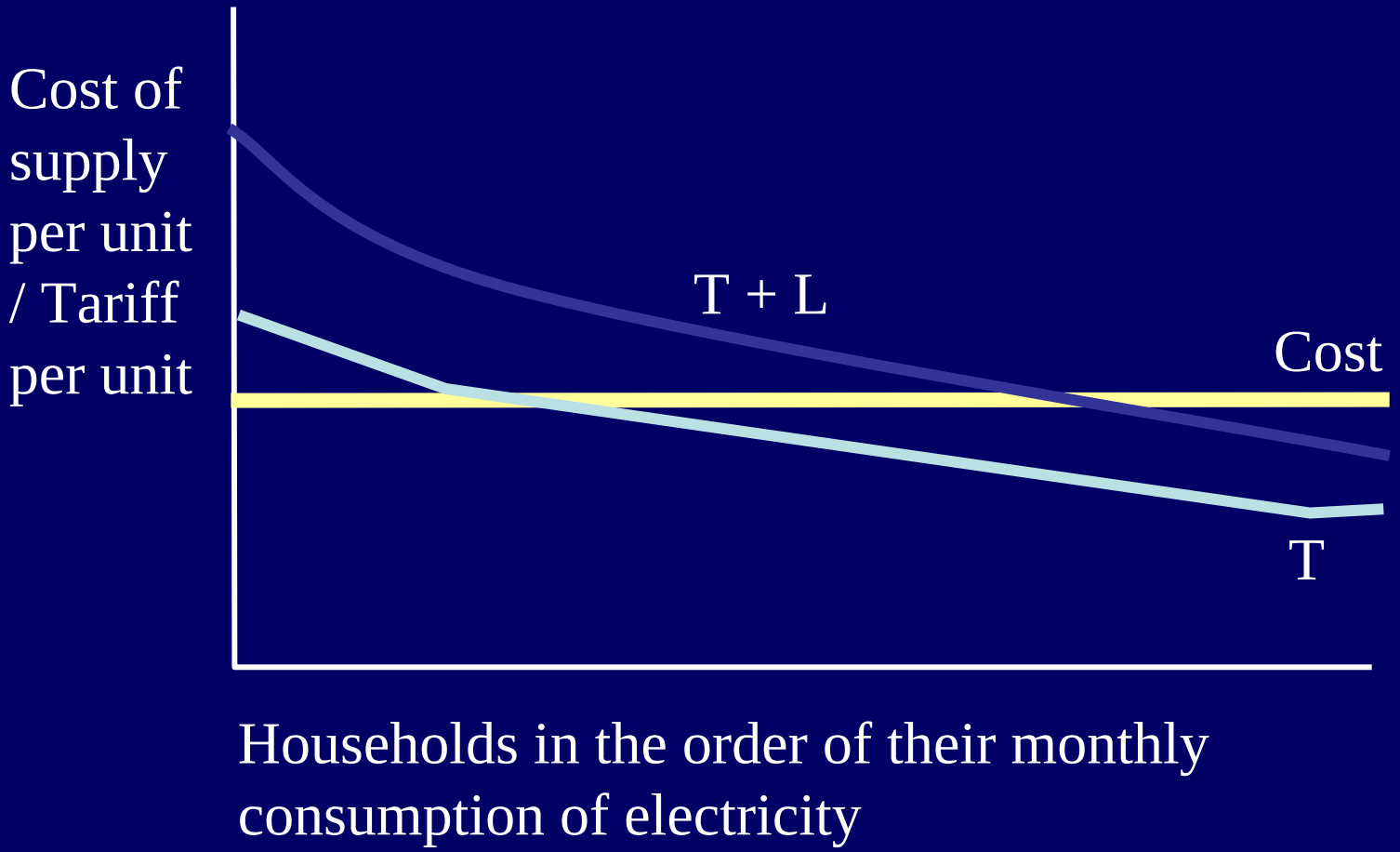


- **Only 40% use electricity**
- **Adequate support for TR**
- **Adequate support for ER**

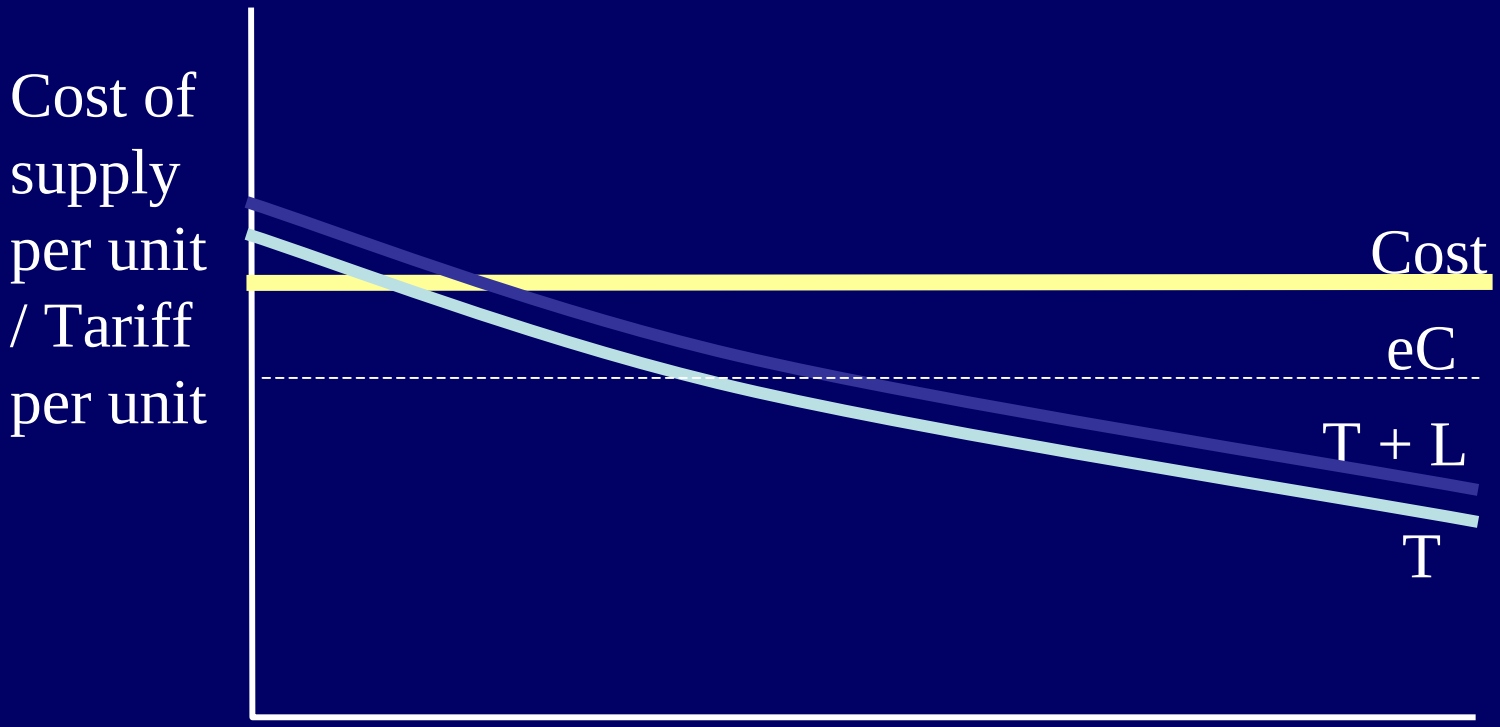


- **Social support for TR and ER depends on other factors**

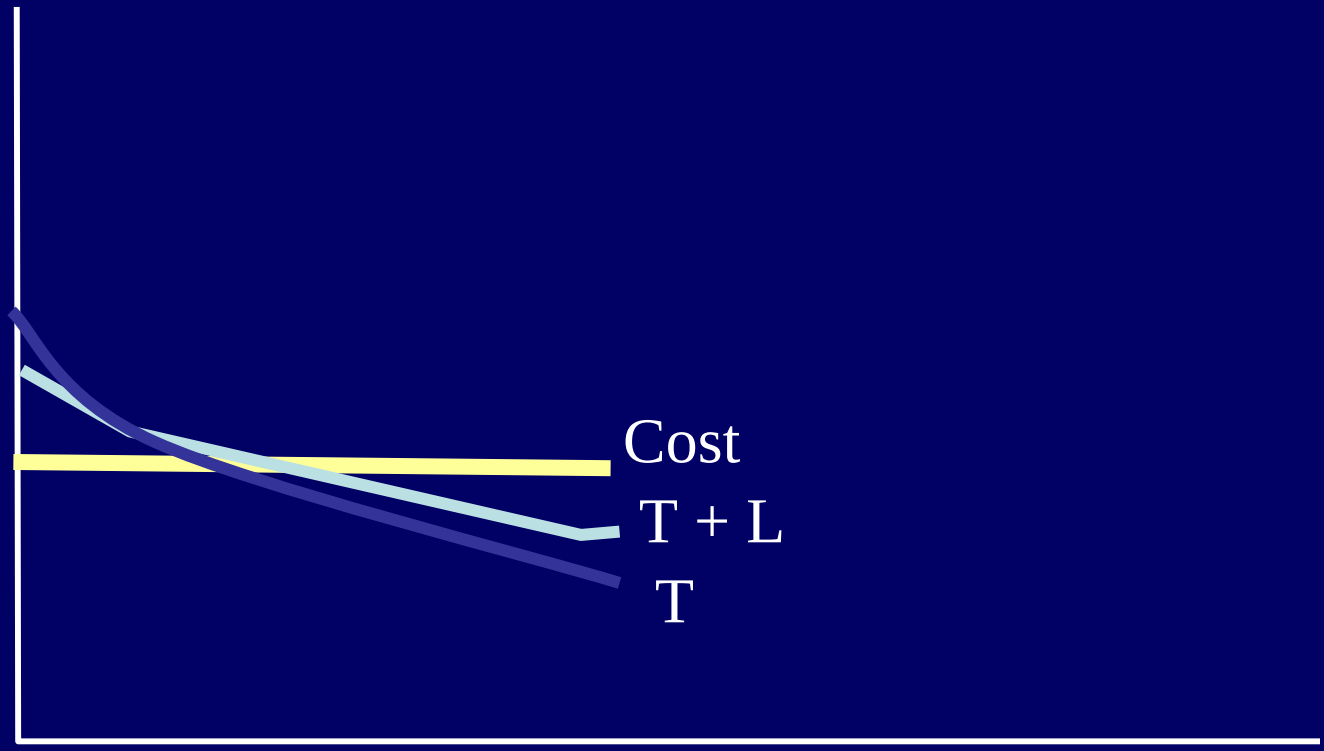
If people loose due to poor quality of supply



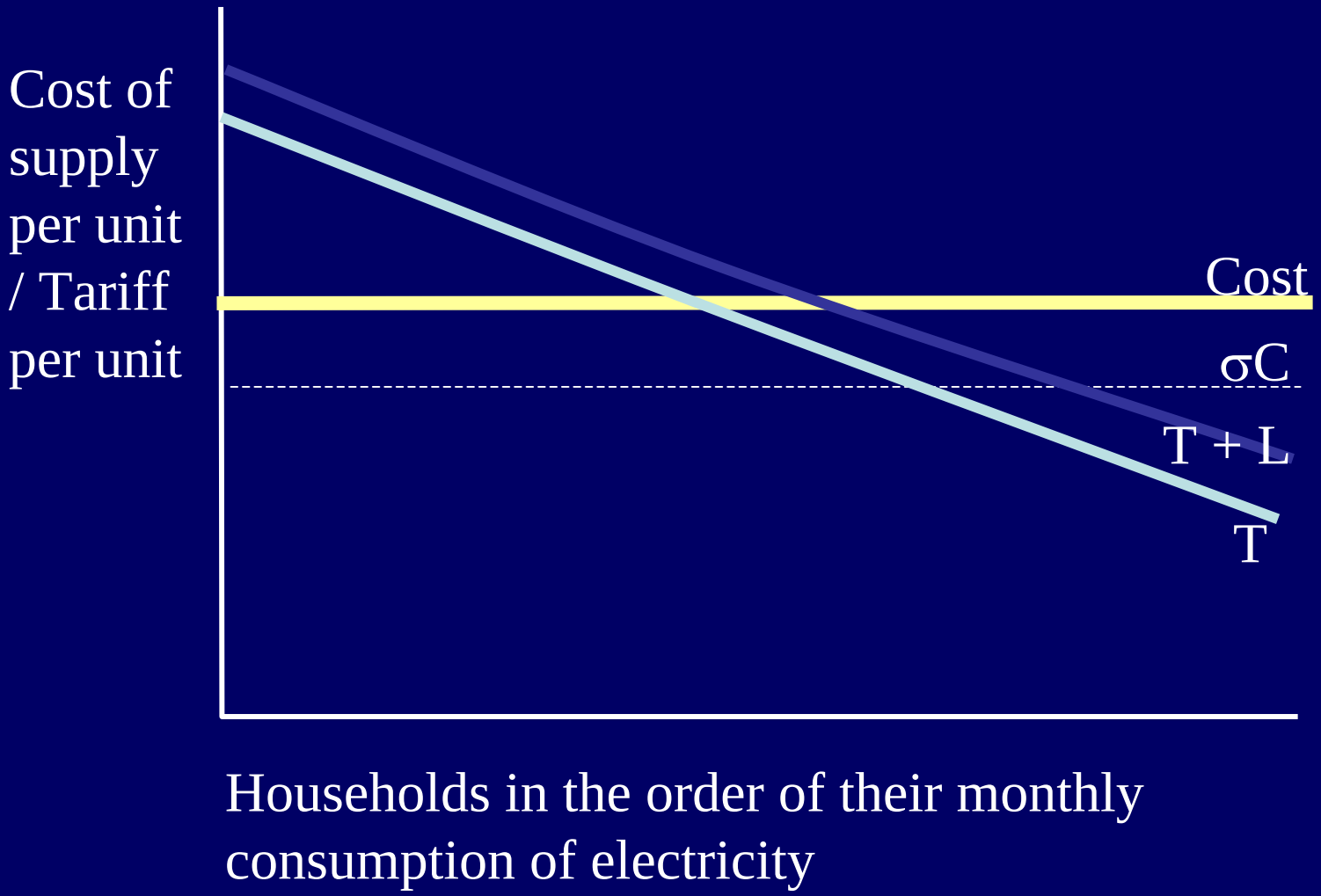
- **Adequate support for TR and ER if reform can be perceived to improve quality of supply**



The social support for reform depends on other factors



- **Not much opposition to TR**
- **If TR is implemented adequate support for ER**


Cost of supply per unit / Tariff per unit
Cost
σC
T + L
T
Households in the order of their monthly consumption of electricity

Data and Sources

1. Ratio of households having electricity connections
   - Census, NSSO
2. The average tariff paid per unit by households
   - NSSO, Primary survey
3. The average cost to supply of electricity
   - SEBs, Planning commission, tariff petitions
4. The quality of power supply received by the households; cost incurred due to poor quality
   - Primary survey

Data and Sources contd….

5. How do people perceive the opportunity cost of governmental expenditure in power supply
   - Primary survey
6. The support or opposition to reform
   - deduced from the implementation of reform, any reform (such as privatisation),
   - asking people whether they are willing to support strategies of tariff and efficiency reforms (primary survey)

Data and Sources: Primary survey

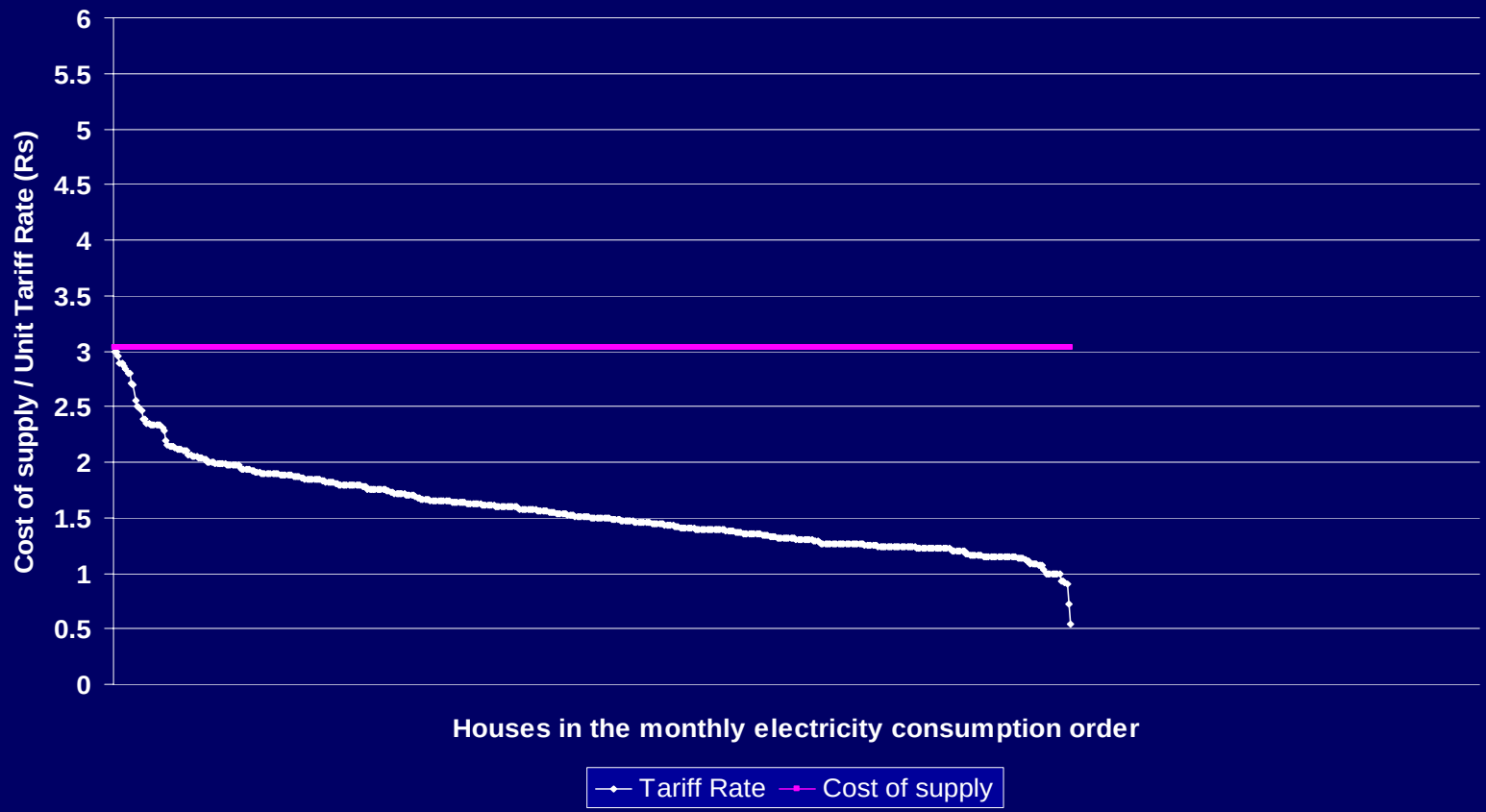
- Purpose is to get a cross section of consumers in each state
- Representation of urban / rural consumers
- Areas chosen by considering different levels of connectivity
- A random sample chosen systematically within the area (village/ ward) selected

Some limitations of this exercise

- If we focus on the different outcomes in different states, econometric exercise is difficult due to the small number of states
- Used a qualitative case study approach
- Econometric exercise on data pooled from all states

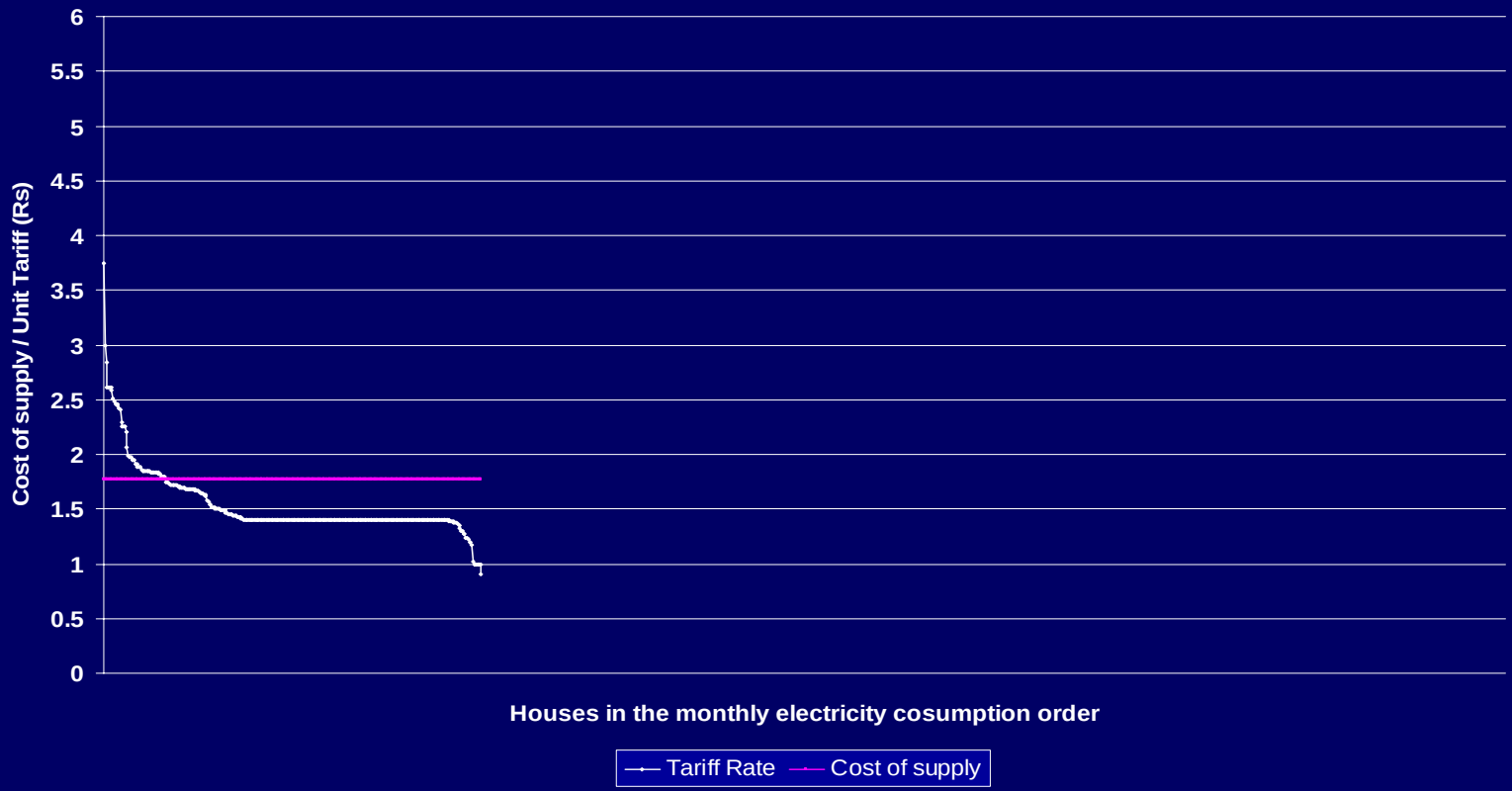
Some preliminary findings of the study

Average tariff rate and cost of supply
Kerala



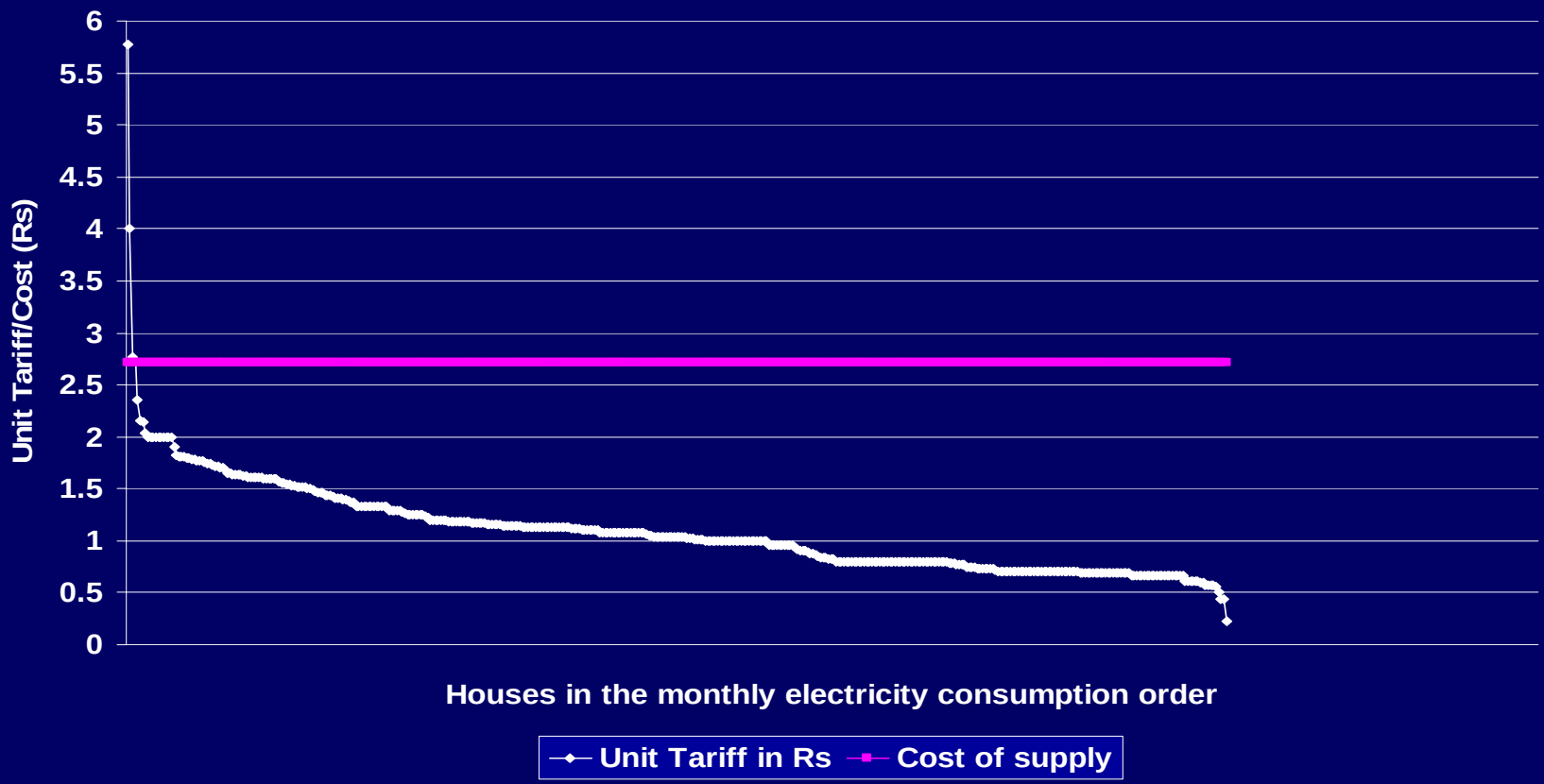
Average tariff rate and cost of supply

Orissa



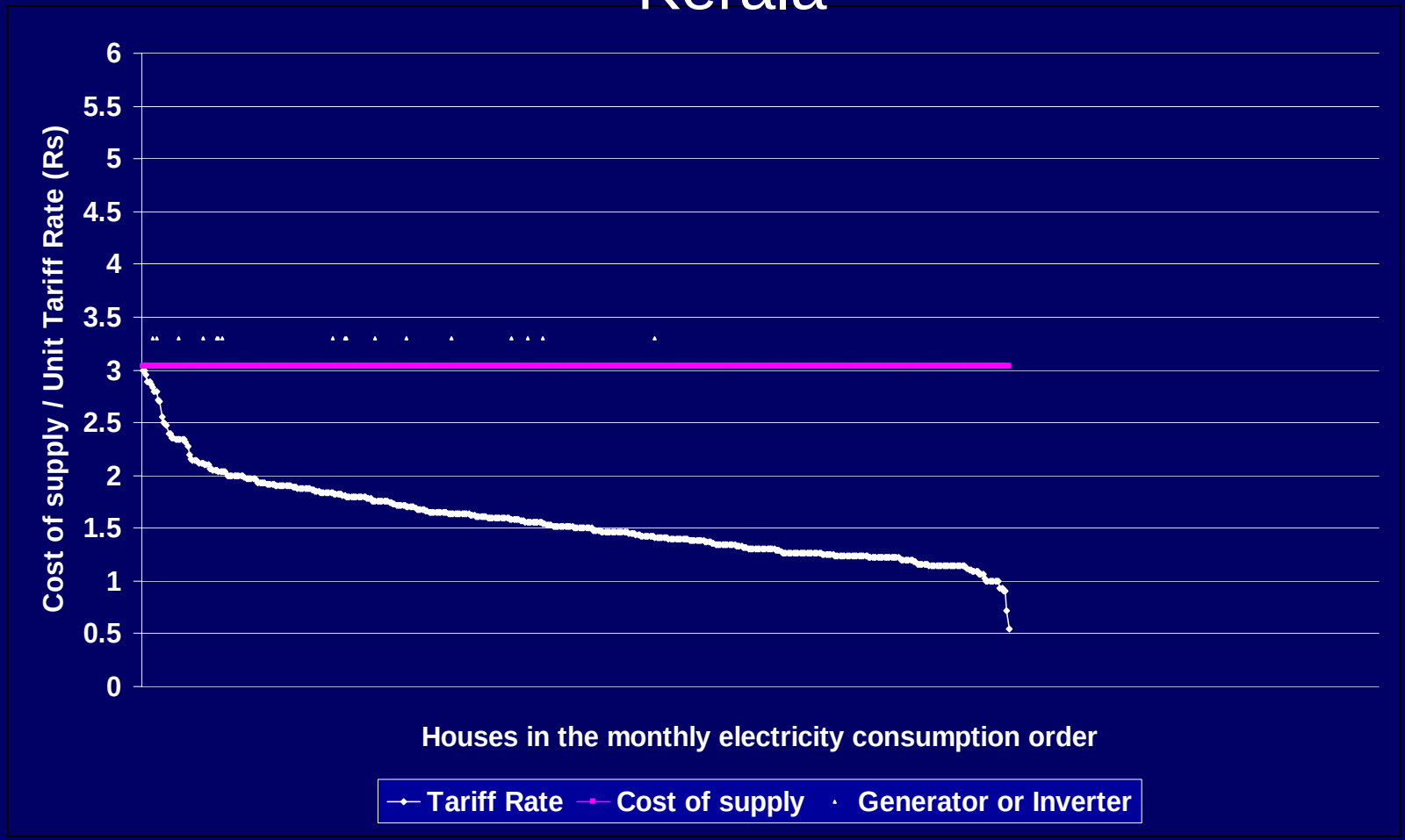
Average tariff rate and cost of supply

Tamil Nadu



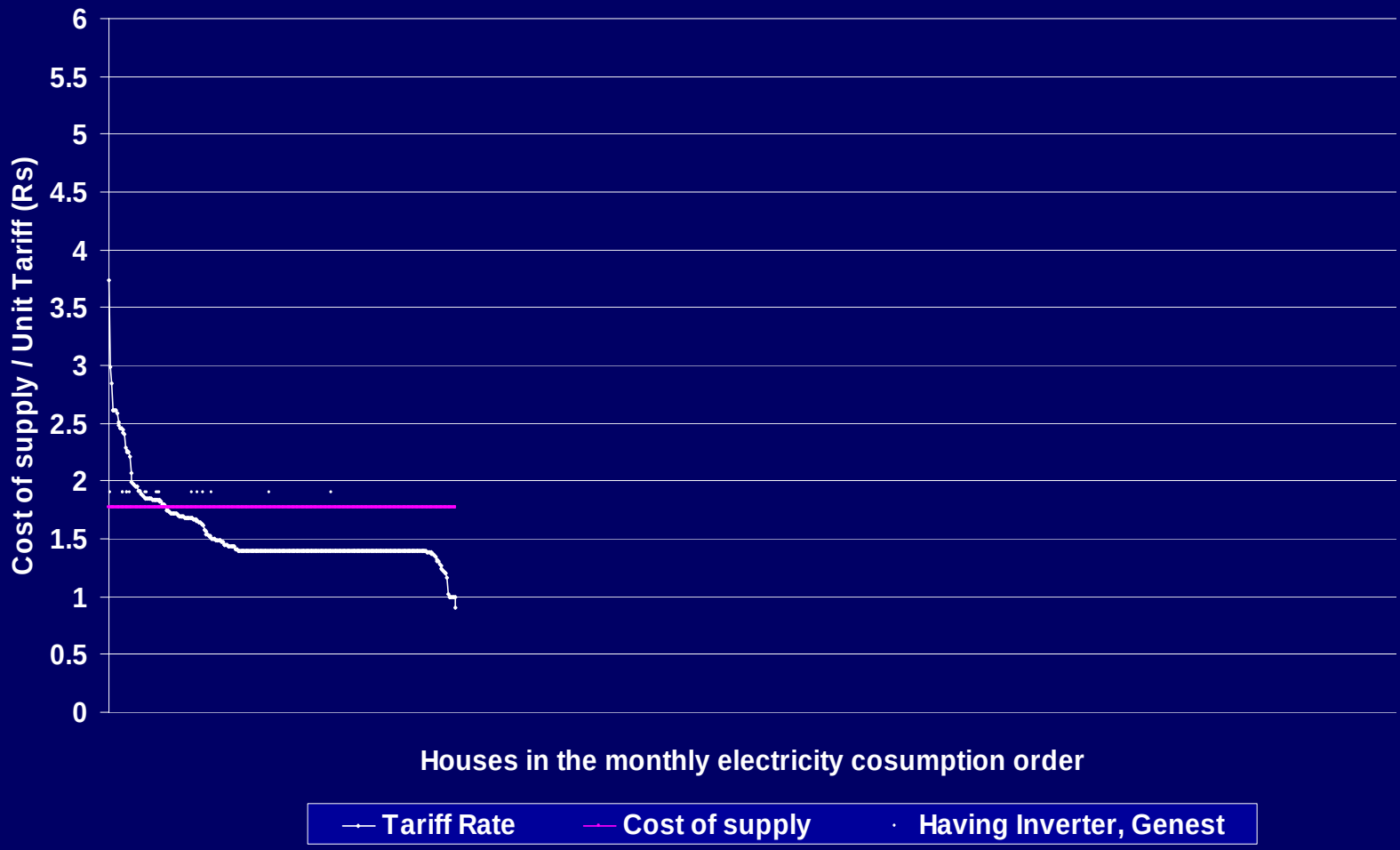
Consumers using instruments like Inverter, Generator etc

Kerala

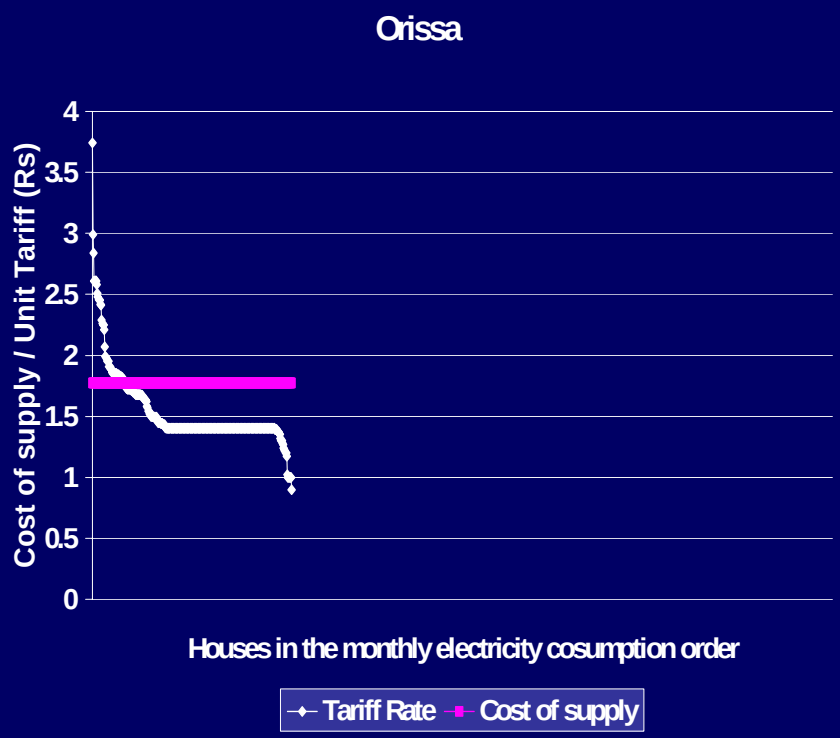


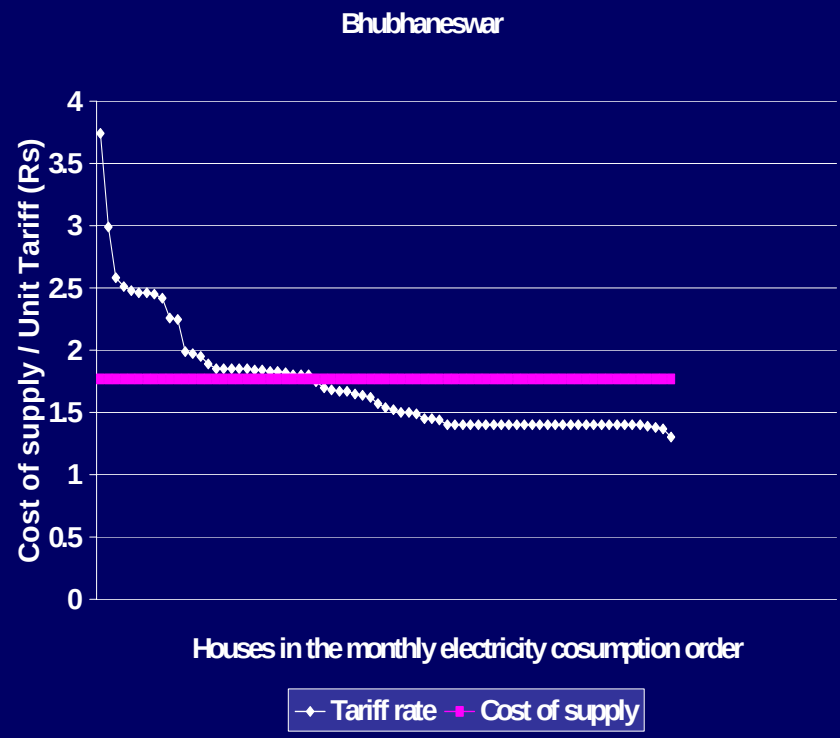
Consumers using instruments like Inverter, Generator etc

Orissa



Average unit tariff and cost of supply in city vis-à-vis the state as a whole





Data Source: Primary Survey, 2004

The situation in the state as a whole Vs City

- Increase in per household consumption in the cities
- More households paying near or above cost of supply in cities than the state as a whole
- The use of generators more prevalent in cities
- The likelihood of more support for reforms in cities

Losses and gains beyond tariffs and quality of supply

- Seeking households' opinion on privatization and willingness to pay for better quality
- Their perception of how the governmental expenditure in power sector affect other governmental services

Percentage of consumers within a tariff rate group who support privatisation

Consumers paying an average tariff rate	Kerala	Tamil Nadu	West Bengal	Andhra Pradesh
Above cost of supply	-	1 (25)	6 (24.0)	3 (16.7)
Cost-Rs.0.5<tariff rate>cost	3 (25)	-	2 (13.3)	1 (6.7)
Cost-Rs. 1<tariff rate>cost-Rs. 0.5	9 (25.72)	1 (3.23)	20 (15.4)	9 (22.5)
Cost-Rs. 1.5<tariff rate>cost-Rs. 1	37 (19.37)	13 (15.85)	12 (11.3)	18 (20.7)
Cost-Rs. 2<tariff rate>cost-Rs. 1.5	22 (8.76)	32 (14.35)	5 (20.8)	23 (9.7)
Cost-Rs. 2.5<tariff rate>cost-Rs. 2	2 (14.28)	5 (5.68)	-	6 (12.2)

Source: Primary Survey, 2004

Readiness to pay more as tariff and support privatisation in city vis-à-vis the state as a whole

	Those who are ready to pay more for better quality of supply	Those who are supporting privatisation
Tamil Nadu	12.5	11.8
Chennai	17	7
Kerala	8.71	14.6
Ernakulam	10.38	18.87
Orissa	20.3	
Bhubaneswar	37.5	
West Bengal	26.6	14.6
Hoogly	23.2	22.2
Andhra Pradesh	15.5	13.5
Secondarabad	24.0	20.8

Source: Primary Survey, 2004

Percentage of consumers within a tariff rate group who are ready to pay more for better quality supply

Consumers paying an average tariff rate	Kerala	Orissa	Tamil Nadu	West Bengal	Andhra Pradesh
Above cost of supply	–	25 (47.17)	1 (25)	2 (8.0)	5 (27.8)
Cost–Rs.0.5<tariff rate>cost	3 (25.0)	38 (14.90)	1 (100)	2 (13.3)	2 (13.3)
Cost–Rs. 1<tariff rate>cost–Rs. 0.5	5 (14.3)	6 (42.86)	2 (6.45)	43 (33.1)	16 (40.0)
Cost–Rs. 1.5<tariff rate>cost–Rs. 1	15 (7.9)	–	18 (21.95)	29 (27.4)	12 (13.8)
Cost–Rs. 2<tariff rate>cost–Rs. 1.5	19 (7.6)	–	26 (11.65)	5 (20.8)	24 (10.1)
Cost–Rs. 2.5<tariff rate>cost–Rs. 2	1 (7.1)	–	7 (7.95)	–	11 (22.4)

Source: Primary Survey, 2004

How do people see the opportunity cost of government expenditure in power sector

Those who think that provision of electricity at subsidised rates affect the provision of any other governmental service (percentage)

Kerala	26.1
Orissa	14.8
Tamil Nadu	4.3
West Bengal	26.0
Andhra Pradesh	56.6

Source: Primary Survey, 2004

Preference of electricity subsidy Vs other governmental services with better quality

State	Provision of electricity subsidy at current rate	Improving other governmental services, by increasing electricity charge
Kerala	76.82	23.18
Orissa	56.14	28.07
Tamil Nadu	55.56	5.55
West Bengal	24.05	68.35
Andhra Pradesh	48.16	21.10

Source: Primary Survey, 2004

Perception on governmental expenditure

- Majority don’t perceive the higher opportunity cost of governmental expenditure in power sector
- Likely reasons
  - Inefficiency in the provision of other governmental services
  - The nature of the distribution of tax burden

Percentage of consumers within a tariff rate group who are ready to pay more for better quality supply or support privatisation

Consumers paying an average tariff rate	Kerala		Orissa	Tamil Nadu		West Bengal	
	WTP more	Privatisation	WTP more	WTP more	Privatisation	WTP more	Privatisation
Above cost of supply	-	-	47.17	25	25	13.3	13.3
Cost-Rs.0.5<tariff rate>cost	25	25	14.90	-	100	33.1	15.4
Cost-Rs. 1<tariff rate>cost-Rs. 0.5	14.29	25.72	42.86	3.23	6.45	27.4	11.3
Cost-Rs. 1.5<tariff rate>cost-Rs. 1	7.85	19.37	-	15.85	21.95	20.8	20.8
Cost-Rs. 2<tariff rate>cost-Rs. 1.5	7.57	8.76	-	14.35	11.65	-	-
Cost-Rs. 2.5<tariff rate>cost-Rs. 2	7.14	14.28	-	5.68	7.95	-	-

Readiness to pay more as tariff and support privatisation in city vis-à-vis the state as a whole

	Those who wish to pay more for better quality of supply	Those who are supporting privatisation
Tamil Nadu	12.5	11.8
Chennai	17	7
Kerala	8.71	14.6
Ernakulam	10.38	18.87
Orissa	20.3	
Bhubaneswar	37.5	
West Bengal	26.6	14.6
Hoogly	23.2	22.2

Summary of uni-variate logistic regression results

Independent Variabls	Dependent variables	
	Privatisation	WTP more
WTP more for better quality (1 – Yes; 0- No	**2.284**	**-**
Owning washing machine/ computer (1 – Yes; 0- No)	**1.604**	**0.296**
Power cut (More than 30 minutes) (1 – Yes; 0- No)	**1.221**	**0.426**
Voltage problem (1 – Yes; 0- No	**1.213**	**2.180**
Having UPS (1 – Yes; 0- No	**5.738**	**3.145**

Summary of uni-variate logistic regression results contd..

Independent Variabls	Dependent variables	
	Privatisation	WTP more
Tariff Range (1 >= Cost of supply – 0.50 > 0)	**1.101**	**3.410**
Unit consumption (1 - Above the median ; 0- Below median	**1.769**	**1.491**
Electricity connection (1 – Yes; 0- No)	**0.750**	**-**
Having inverter / generator (1 – Yes; 0- No)	**3.413**	**1.889**
Privatization (1-Yes to privatization, 0- No to privatization)	**-**	**2.284**

Average monthly consumption of electricity by floor and roof type

		Kerala	Orissa	Tamil Nadu	West Bengal*
Roof	Concrete	186	197	186	212.40
	Tiles	104	154	100	43.17
	Coconut Leaf	77	91	85	3.80
	Others	94	198	89	72.60
Floor	Mosaics	200	228	287	376.16
	Marble	220	264	272	213.20
	Red/Black Oxides	135	115	83	186.73
	Cement	98		142	
	Mud	54	177	117	29.31

* Tri monthly

Implications

- **The losses to the `rich' is not sufficient enough to encourage political decision-makers to go ahead with reforms**
- **If middle class is the net gainer of the status quo, reform is likely to be delayed**
- **Higher the level of consumption of majority of domestic consumers, easier to implement reforms**