

Preliminary and Incomplete Draft

**On the Political Economy of a
Backward Region**

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Purpose of the Paper

- To develop a rudimentary political economy model of a less developed region by highlighting
- To model the political behaviour and the political and economic consequences of the vast majority of voters in the informal sector where property rights are not well defined.

- As a consequence of ill-defined property rights, informal sector voters depend crucially on political favours for their survival.
- Examples: Street Hawkers selling their ware on the pavement, Illegal residents on government or railways land, farmers depending on subsidized seeds, fertilizer, water or credit disbursed through local political bodies like Panchayets.

Results and Conclusions

- Political party with a better organization can signal a higher probability of remaining in power. This will attract more informal sector voters to the party.
- Since the party will depend more upon informal sector voters, to increase the probability of winning it will try to maximize the size of the informal sector by adopting anti development policies.

- The probability of winning for this party will also be higher.
- Party with worse organization will have the incentive to adopt pro-development policies.
- It will have a lower probability of remaining in power.
- Thus democracy will not function properly.

Environment

There is one formal and one informal sector.

In the formal sector, output produced by capital (k) and labour (n).

Capital is mobile, labour is confined to the two sectors of the region.

We have two equations determining output (q) and capital inflow (k):

$$(1) \quad \pi = q - lw$$

$$(2) \quad q = q(k, I), q_k < 0, q_I > 0.$$

Wage rate w and labour-capital ratio l are fixed.

Also infrastructure I is a policy parameter.

If I increases, both k and q goes up, implying a rise in formal employment n .

There are two political parties in the region denoted by A and B .

At any period, the economy can be in one of the two states, X_A, X_B , where X_i denotes the state where party i is in power. Let us define

$$(3) \quad p \equiv \text{prob}[X_{t+1} = X_A \mid X_t = X_A]$$

$$1 - p \equiv \text{prob}[X_{t+1} = X_B \mid X_t = X_A]$$

Similarly we define

$$(4) \quad q = \text{prob}[X_{t+1} = X_B \mid X_t = X_B]$$

$$1 - q = \text{prob}[X_{t+1} = X_A \mid X_t = X_B]$$

There are two generations, young and old, coexisting in the economy.

When young, an agent gets a job either in the informal sector or, if he is lucky, in the formal sector.

In the former case the agent continues to work in the informal sector when old. During this period, the agent gets a rent R in addition to his wage a if the party he had supported while young comes to power. Otherwise, he earns only a .

In the case where the agent works in the formal sector when young, he retires when old and consumes his savings which he had made while young and working.

Thus, by assumption, only the young work in the formal sector while both the young and the old work in the informal sector.

Population size of workers of each generation is normalized to unity and the working and retired agents are assumed to belong to the interval $[0,1]$. In addition, there are full time party workers for each party.

Of the total number of young people, n people work in the formal sector and $(1-n)$ in the informal sector.

In addition, a part of the old generation also works in the informal sector.

The Sequence of Events

- Ruling party chooses I
- Maximum and minimum values of I are I^{max} and I^{min} .
- Given I employment in the two sectors determined.
- Outputs are produced, wages are paid. Young in formal sector consume and save. Young in informal sector consume. Old of each sector consume.
- Old of each sector die after consumption, before voting.(this assumption simplifies the algebra)
- Elections are held and only young vote.

Equilibrium

In the informal sector political equilibrium is given by

$$a + p\left[a + \frac{R}{\alpha(1-n)}\right] + (1-p)a =$$
$$a + (1-p)\left[a + \frac{R}{(1-\alpha)(1-n)}\right] + pa$$

where a is informal wage, R is political rent, α is proportion of informal workers joining party A.

The equilibrium condition yields

$$(3) \quad p = \alpha$$

Similarly for party B we have

$$(4) \quad q = \beta$$

Assume voters in the formal sector are random voters. Let π_A be the vote share of formal sector voters for party A . π_A has a distribution function $F(\cdot)$.

$$p \equiv \text{Prob} [\text{party A wins} \mid \text{party A is in power}]$$

$$= \text{Prob} [\pi_A n + \alpha(1-n) + C_A > (1-\pi_A) + (1-\alpha)(1-n) + C_B]$$

Where C_A and C_B are non-opportunistic party workers representing party organization. Assume $C_A > C_B$. From the above equation we may write

$$p = 1 - \text{Prob} \left[\pi_A \leq \frac{1}{2} + (1-2\alpha) \frac{(1-n)}{2n} - \frac{C}{2n} \right]$$

$$= 1 - \text{Prob} \left[\pi_A \leq \alpha + \frac{1-2\alpha-C}{2n} \right]$$

so that we may write

$$p = 1 - F(x), \text{ where } x \equiv \alpha + \frac{1 - 2\alpha - C}{2n}$$

It is easy to see that

$$p = p(\alpha, C, n), p_\alpha > 0, p_C > 0, p_n \text{ can have any sign.}$$

Finally, equilibrium for party A is given by

$$p(\alpha, C, n) = \alpha$$

we assume that the distribution function $F(x)$ satisfies

$$F'(x) > 0, \text{ for } 0 \leq x \leq 1 \text{ and}$$

$$F''(x) > 0 \text{ for } x < 1/2,$$

$$F''(x) = 0 \text{ for } x = 1/2,$$

$$F''(x) < 0 \text{ for } x > 1/2.$$

Noting that $p(\alpha) = 1 - F(x)$

and using the definition of x we get $p'(\alpha) > 0$ and

$$p''(\alpha) = -\frac{(1-n)^2}{n^2} F''(x). \text{ At } x = 1/2, \text{ the value of}$$

$$\alpha = \frac{1}{2} - \frac{C}{2(1-n)} = \alpha', \text{ say. It is also easy to verify that}$$

for $x < 1/2, \alpha > \alpha'$ and for $x > 1/2, \alpha < \alpha'$.

Combining all this we get

$$p''(\alpha) > 0 \text{ for } \alpha < \alpha'$$

$$= 0 \text{ for } \alpha = \alpha'$$

$$< 0 \text{ for } \alpha > \alpha'$$

Assumption 1. $n^{\min} > \frac{1+C}{2}$

Proposition 1 Under *Assumption 1*, equilibrium always exists.

In general, equilibrium is not unique. But assumption 2 below guarantees uniqueness.

Assumption 2. $f\left(\frac{1}{2}\right) < \frac{n^{\min}}{1 - n^{\min}}$

Assumption 2 puts an upper bound on the peakedness of the distribution.

Proposition 3. In equilibrium the following hold:

(a) Party *A* chooses $n = n^{\min}$ and Party *B* chooses $n = n^{\max}$

(b) $p > q$

(c) The size of opportunistic voters for the ruling party is bigger under the rule of party *A*.

We define

$$P = \lim_{t \rightarrow \infty} \text{Prob}[X_t = X_A] \quad \text{and} \quad Q = \lim_{t \rightarrow \infty} \text{Prob}[X_t = X_B].$$

It may be shown that

$$P = \frac{1 - q}{2 - (p + q)} \quad \text{and} \quad Q = \frac{1 - p}{2 - (p + q)}$$

Proposition 4. Party *A* has a higher unconditional probability to remain in power than Party *B*.

Plan for Future Work

- To analyze the case of multiple equilibrium
- To allow formal sector voters to have a preference for the party which spends more on infrastructure
- To consider explicitly the budget constraint of the government where infrastructure is financed by taxing the formal sector