

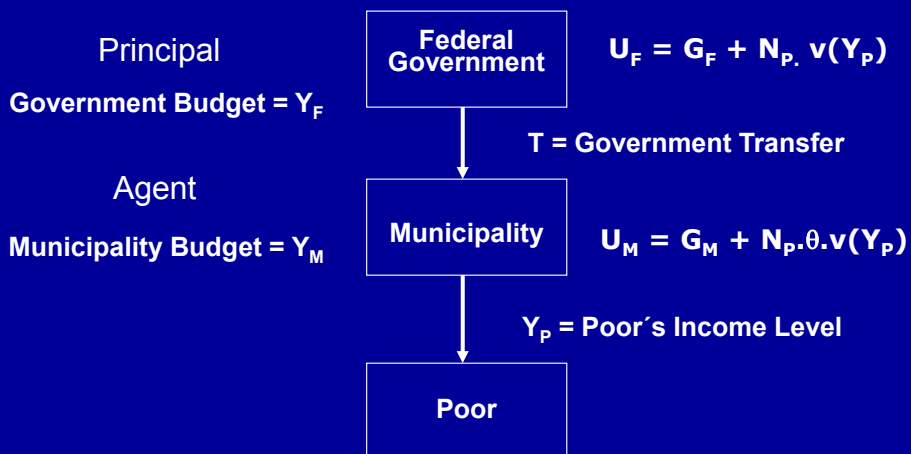
Social Goals *1

references: **2 short text or alternatively
****2B long text

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*1 Social Goals Theory

- **Principal-Agent Model** (based on Neri and Xerez (2003, 2004))



References: Besley (1997), Gelbach and Pritchett (1997), and Azam and Laffont (2001)

Presentation Overview

1. Basic Model
2. Static Model
3. Dynamic Model
4. Model with Shocks

Basic Hypothesis: Federal government and municipalities have different degrees of concern about the living conditions of the poor: aversion to poverty θ

Static Model

Autarchy (A)

$$\text{Max } G_M + N_P \cdot \theta \cdot v(Y_P)$$

Y_P

$$\text{s.a: } G_M + N_P \cdot Y_P \leq Y_M$$

FOC:

$$v'(Y_P^A) = \frac{1}{\theta} \longrightarrow \theta_1 > \theta_2 \Rightarrow Y_{P_1} > Y_{P_2}$$

The larger the coefficient of the local government's aversion to poverty, the larger will be the poor's income.

Unconditional Transfer (I)

The government does not establish any social target, it transfers unconditionally a fixed amount, T^1 .

$$\begin{array}{l} \text{Max } G_M + N_P \cdot \theta \cdot v(Y_P) \\ Y_P \\ \text{s.a : } G_M + N_P \cdot Y_P \leq Y_M + T^1 \end{array}$$

FOC:

$$v'(Y_P^I) = \frac{1}{\theta} \quad \Rightarrow \quad Y_P^I = Y_P^A$$

Proposition 1: If the federal government performs unconditional transfers to the local governments, the poor's situation does not change.

Crowding-out Effect

Poverty Incentives (IP)

The government always helps more the municipalities where the poor are poorer.

Transfer: $T = (K - Y_P) \cdot N_P$

$$\begin{array}{l} \text{Max } G_M + N_P \cdot \theta \cdot v(Y_P) \\ Y_P \\ \text{s.a : } G_M + N_P \cdot Y_P \leq Y_M + (K - Y_P) \cdot N_P \end{array}$$

FOC:

$$v'(Y_P^{IP}) = \frac{2}{\theta} \quad \longrightarrow \quad Y_P^{IP} < Y_P^A$$

The smaller the poor's income, the greater is the income per capita transfer carried out by the government to the municipality => **poverty incentives**

Social Credit

Transfer Conditional on the Fulfillment of Social Targets (MS)

$$\begin{aligned} \text{Max}_{\{Y_p, T^{MS}\}} & Y_F - T^{MS}(Y_p) + N_p \cdot v(Y_p) \\ \text{s.a:} & (Y_M + T^{MS}(Y_p) - N_p \cdot Y_p) + N_p \cdot \theta \cdot v(Y_p) \geq U(\theta) \quad (\text{RP}) \end{aligned}$$

FOC:

$$v'(Y_p^{MS}) = \frac{1}{1 + \theta} \quad \Rightarrow \quad Y_p^{MS} > Y_p^A$$

Proposition 2: the establishment of a social credit mechanism increases poor's income.

Furthermore, a social credit contract leverages locally funded social investments.

$$G_M^{MS} < G_M^A$$

Static Model

Transference with Social Targets (MS)

Linear Contract :

$$T(Y_p) = a + b \cdot Y_p$$

Statement n°3: The coefficients of a linear contract with social goals are:

$$a = T(Y_p^{MS}) - b \cdot Y_p^{MS} \quad b = \frac{1}{1 + \theta}$$

where

$$T(Y_p^{MS}) = N_p \cdot [(Y_p^{MS} - Y_p^A) - \theta \cdot (v(Y_p^{MS}) - v(Y_p^A))]$$

Static Model

Favoritism without Transfer (FA)

- Electoral redout;
- The youngest people are not allowed to vote.

$$\begin{aligned} \text{Max}_{\{Y_{P1}, Y_{P2}\}} & G_M + N_{P1} \cdot \theta_1 \cdot v(Y_{P1}) + N_{P2} \cdot \theta_2 \cdot v(Y_{P2}) \\ \text{s.t.} & G_M + N_{P1} \cdot Y_{P1} + N_{P2} \cdot Y_{P2} \leq Y_M \end{aligned}$$

FOC:

$$v'(Y_{P1}^{FA}) = \frac{1}{\theta_1} \quad e \quad v'(Y_{P2}^{FA}) = \frac{1}{\theta_2}$$

$$\theta_1 > \theta_2 \quad \longrightarrow \quad Y_{P1}^{FA} > Y_{P2}^{FA}$$

Static Model

Favoritism Conditional on the Fulfillment of Social Targets (FMS)

$$\text{Max}_{\{Y_{P1}, Y_{P2}\}} G_F + N_{P1} \cdot v(Y_{P1}) + N_{P2} \cdot v(Y_{P2})$$

$$\text{s.a : } G_F + T^{\text{FMS}} \leq Y_F$$

$$G_M + T^{\text{FMS}} + N_{P1} \cdot \theta_1 \cdot v(Y_{P1}) + N_{P2} \cdot \theta_2 \cdot v(Y_{P2}) \geq U_M^{\text{FA}} \quad (\text{RP})$$

FOC:

$$v'(Y_{P1}^{\text{FMS}}) = \frac{1}{1+\theta_1} \quad \text{e} \quad v'(Y_{P2}^{\text{FMS}}) = \frac{1}{1+\theta_2} \quad \longrightarrow \quad Y_{P1}^{\text{FMS}} > Y_{P1}^{\text{FA}} \quad \text{e} \quad Y_{P2}^{\text{FMS}} > Y_{P2}^{\text{FA}}$$

Static Model

Favoritism Conditional on the Fulfillment of Social Targets (FMS)

Proposition 4: A contract with social targets would reduce the social difference among the groups.

$$\frac{v'(Y_{P1}^{\text{FA}})}{v'(Y_{P2}^{\text{FA}})} = \frac{1/\theta_1}{1/\theta_2} = \frac{\theta_2}{\theta_1} > \frac{1+\theta_2}{1+\theta_1} = \frac{1/(1+\theta_1)}{1/(1+\theta_2)} = \frac{v'(Y_{P1}^{\text{FMS}})}{v'(Y_{P2}^{\text{FMS}})}$$

Static Models

1. Autarchy (A)
2. Unconditional Transfer (I)
3. Poverty Incentives (IP)
4. Social Targets (MS)
5. Political Favoritism without Transfer (FA)
6. Favoritism with Social Credit (FSC)

Non Deterministic Models

1. Idiosyncratic Shocks → Insurance Provision.
2. Aggregate Shocks → Performance Comparison (ex: rankings).

Dynamic Models

1. Complete Contracts

- Full Commitment
- Long term commitment
- No commitment or spot commitment

2. Incomplete Contracts

Dynamic Model

**Full Commitment

Government's Problem:

$$\text{Max}_{(\bar{Y}_t, \bar{T}_t, \bar{Y}_t, \bar{L}_t)} \pi \left[\sum_{t=1}^T \delta^{t-1} (Y_{F_t} - \bar{T}_t) + N_p \cdot v(\bar{Y}_p) \right] + (1-\pi) \left[\sum_{t=1}^T \delta^{t-1} (Y_{F_t} - \bar{T}_t) + N_p \cdot v(\bar{Y}_p) \right]$$

$$\text{s.a: (RP } \bar{\theta}) \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \bar{T}_t - N_p \cdot \bar{Y}_p) + N_p \cdot \bar{\theta} \cdot v(\bar{Y}_p)] \geq U(\bar{\theta})$$

$$\text{(RP } \underline{\theta}) \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \underline{T}_t - N_p \cdot \underline{Y}_p) + N_p \cdot \underline{\theta} \cdot v(\underline{Y}_p)] \geq U(\underline{\theta})$$

$$\text{(RCI } \bar{\theta}) \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \bar{T}_t - N_p \cdot \bar{Y}_p) + N_p \cdot \bar{\theta} \cdot v(\bar{Y}_p)] \geq \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \underline{T}_t - N_p \cdot \underline{Y}_p) + N_p \cdot \bar{\theta} \cdot v(\underline{Y}_p)]$$

$$\text{(RCI } \underline{\theta}) \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \underline{T}_t - N_p \cdot \underline{Y}_p) + N_p \cdot \underline{\theta} \cdot v(\underline{Y}_p)] \geq \sum_{t=1}^T \delta^{t-1} [(Y_{M_t} + \bar{T}_t - N_p \cdot \bar{Y}_p) + N_p \cdot \underline{\theta} \cdot v(\bar{Y}_p)]$$

Conclusion: Theory

- Unconditional Transfer does not change poor's situation;
- The smaller the poor's income, the greater is the income per capita transfer carried out by the government to the municipality =>poverty incentives;
- Social Targets increase the efficiency in the use of public money and help to reduce the social difference among the different groups;
- The existence of a commitment mechanism, when there is not the possibility of any type of renegotiation among the parties, makes possible greater efficiency in the dynamic problem (with complete contracts);

**Think Global, Act Local:
Social Credit based on the SDGs
(Sustainable Development Goals)
Or previous MDGs (Millennium Development Goals)**

**What? Incorporate MDGs
(now SDGs) into the local
economic architecture through
incentive contracts.**

Why? to reduce Moral Hazard problems in social transfers to local governments.

How? through Social Credit mechanisms that transform poverty emancipation into financial resources.

Why use MDGs (now SDGs) as numeraire?

- **Exogenous for a Given Country (credibility)**
 - **Coordinate actions across different government levels from different political parties**
- **Long-Lasting**
 - **Smooth transitions between different political mandates.**

Practical Issues: **Care with MDGs Contracts**

- Not use the value of the indicator at a given date but its discounted present value along its path.
- 1st MDG should be based on P^2 (squared poverty gap) and not on the proportion of poor (P^0).

Rio City Targets Example (2010)

Descrição das Metas	Indicadores			Valores de Mudanças				
	Fonte	Valor e Data de referência	Fórmula de Cálculo	2012	2013	2014	2015	2016
1 Reduzir em pelo menos 50% a população carioca abaixo da linha de pobreza mais alta da 1ª meta do Milênio da ONU até o final de 2015, tendo como referência o ano de 2007.	IBGE / FGV	4,54% / 2007	% da população que vive com renda domiciliar per capita até 108 reais/mês (corresponde a 2UUS/dia PPC – Paridade Poder de Compra)	- 40,0	- 43,0	- 46,0	- 50,0	-
2 Reduzir em pelo menos 100% a população na pobreza beneficiária do Bolsa Família Federal e do Cartão Família Carioca até o final de 2016, tendo como referência o ano de 2010.	MDS / FGV	4,3% / 2010	(P^2 – que dá mais peso aos mais pobres) na população beneficiária do Bolsa Família w Cartão Família Carioca usando a renda familiar per capita permanente até 108 reais/mês (corresponde a 2UUS/dia PPC)	- 80%	- 85%	- 90%	- 90%	- 10 0 %

Main Lesson: It is not enough to know to whom and the social budget employed; it is necessary to measure social results.

But how we do it?