

**Pensar Global, Agir Local:
Crédito Social baseado nas Metas de
Desenvolvimento do Milênio**

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**What? Incorporate MDGs
into the local economic
architecture through incentive
contracts.**

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

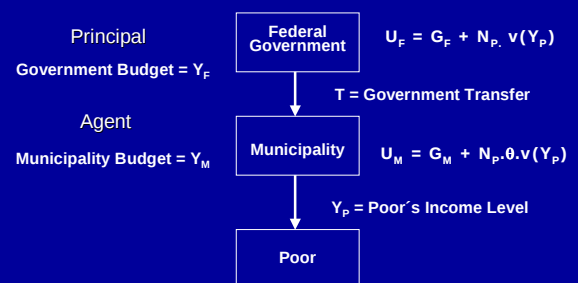
Why use MDGs as numeraire?

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

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

Theory

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



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

Modelo Básico

Hipótese básica: Governo federal e municípios possuem diferentes graus de preocupação com as condições da vida dos pobres (aversão à pobreza).

Referências: Besley (1997), Gelbach e Pritchett (1997) e Azam e Laffont (2001)

Roteiro da Apresentação

1. Modelo Básico
2. Modelo Estático
3. Modelo Dinâmico
4. Modelo com Choques

Modelo Estático

Informação Completa:

1. Autarquia (A)
2. Transferência Incondicional (I)
3. Incentivo Perverso (IP)
4. Transferência com Metas Sociais (MS)
5. Favoritismo em Autarquia (FA)
6. Favoritismo com Metas Sociais (FMS)
7. Parceria entre Governo Federal e Municípios (P)

Autarchy (A)

$$\begin{aligned} \text{Max } G_M + N_p \cdot \theta \cdot v(Y_p) \\ Y_p \\ \text{s.a: } G_M + N_p \cdot Y_p \leq Y_M \end{aligned}$$

FOC:

$$v'(Y_p^A) = \frac{1}{\theta} \longrightarrow \theta_1 > \theta_2 \Rightarrow Y_{p1} > Y_{p2}$$

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^I .

$$\begin{aligned} \text{Max } G_M + N_p \cdot \theta \cdot v(Y_p) \\ Y_p \\ \text{s.a: } G_M + N_p \cdot Y_p \leq Y_M + T^I \end{aligned}$$

FOC:

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

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.

$$\text{Transfer: } T = (K - Y_p) \cdot N_p$$

$$\begin{aligned} \text{Max } G_M + N_p \cdot \theta \cdot v(Y_p) \\ Y_p \\ \text{s.a: } G_M + N_p \cdot Y_p \leq Y_M + (K - Y_p) \cdot N_p \end{aligned}$$

FOC:

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

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)

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

FOC:

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

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

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

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

Modelo Estático

Transferência com Metas Sociais (MS)

Contrato Linear:

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

Proposição 3: Os coeficientes de um contrato linear de metas sociais são:

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

onde

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

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:

$$v'(Y_{p1}^{FA}) = \frac{1}{\theta_1} \quad e \quad v'(Y_{p2}^{FA}) = \frac{1}{\theta_2}$$

$$\theta_1 > \theta_2 \longrightarrow Y_{p1}^{FA} > Y_{p2}^{FA}$$

Static Model

Favoritism Conditional on the Fulfillment of Social Targets (FMS)

$$\begin{aligned} \text{Max}_{\{Y_{p1}, Y_{p2}\}} & G_F + N_{p1} \cdot v(Y_{p1}) + N_{p2} \cdot v(Y_{p2}) \\ \text{s.t.} & G_F + T^{FMS} \leq Y_F \\ & G_M + T^{FMS} + N_{p1} \cdot \theta_1 \cdot v(Y_{p1}) + N_{p2} \cdot \theta_2 \cdot v(Y_{p2}) \geq U_M^{FA} \quad (RP) \end{aligned}$$

FOC:

$$v'(Y_{p1}^{FMS}) = \frac{1}{1+\theta_1} \quad e \quad v'(Y_{p2}^{FMS}) = \frac{1}{1+\theta_2} \longrightarrow Y_{p1}^{FMS} > Y_{p1}^{FA} \quad e \quad Y_{p2}^{FMS} > Y_{p2}^{FA}$$

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.

$$\frac{v'(Y_{p1}^{FA})}{v'(Y_{p2}^{FA})} = \frac{1/\theta_1}{1/\theta_2} = \frac{\theta_2}{\theta_1} > \frac{1+\theta_2}{1+\theta_1} = \frac{1/(1+\theta_1)}{1/(1+\theta_2)} = \frac{v'(Y_{p1}^{FMS})}{v'(Y_{p2}^{FMS})}$$

Static Models

1. Autarchy (A)
2. Unconditional Transfer (I)
3. Poverty Incentives (IP)
4. Social Credit (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.

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:

$$\begin{aligned} \max_{\{T_i, \bar{T}_i, \underline{Y}_i, \bar{Y}_i\}_{i=1}^T} & \pi \left[\sum_{i=1}^T \delta^{i-1} (Y_i - \underline{T}_i) + N_p v(Y_i) \right] + (1-\pi) \left[\sum_{i=1}^T \delta^{i-1} (Y_i - \bar{T}_i) + N_p v(\bar{Y}_i) \right] \\ \text{s.t. : (RP } \bar{\theta}) & \sum_{i=1}^T \delta^{i-1} [(Y_i + \bar{T}_i - N_p \bar{Y}_i) + N_p \bar{\theta} v(\bar{Y}_i)] \geq U(\bar{\theta}) \\ (\text{RP } \underline{\theta}) & \sum_{i=1}^T \delta^{i-1} [(Y_i + \underline{T}_i - N_p \underline{Y}_i) + N_p \underline{\theta} v(\underline{Y}_i)] \geq U(\underline{\theta}) \\ (\text{RCI } \bar{\theta}) & \sum_{i=1}^T \delta^{i-1} [(Y_i + \bar{T}_i - N_p \bar{Y}_i) + N_p \bar{\theta} v(\bar{Y}_i)] \geq \sum_{i=1}^T \delta^{i-1} [(Y_i + \underline{T}_i - N_p \underline{Y}_i) + N_p \bar{\theta} v(\underline{Y}_i)] \\ (\text{RCI } \underline{\theta}) & \sum_{i=1}^T \delta^{i-1} [(Y_i + \underline{T}_i - N_p \underline{Y}_i) + N_p \underline{\theta} v(\underline{Y}_i)] \geq \sum_{i=1}^T \delta^{i-1} [(Y_i + \bar{T}_i - N_p \bar{Y}_i) + N_p \underline{\theta} v(\bar{Y}_i)] \end{aligned}$$

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);

Care with MDGs Contracts

Practical Issues:

- 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 P² (squared poverty gap) and not on the proportion of poor (P⁰).

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?

Difference between GDP per capita Classification and HDI Classification

