VAR of inflation, unemployment and poverty:

The Model:

Equation (1) is a generalization of the Phillips Curve that relate the unemployment expected with the past value of all the variables . The equation can be interpreted as a generation of policy rules which determine the inflation rate expected from the past value of all the variables . Equation (3) and (4) define the unexpected increase on the unemployment rate and in the inflation rate.

$$E(U_t \mid t-1) = a(L)U_{t-1} + b(L)\, p_{t-1} \qquad (1)$$

$$E(p_t \mid t-1) = a^*(L)U_{t-1} + b^*(L)\, p_{t-1} \qquad (2)$$

$$u_t = U_t - E(U_t \mid t-1) \qquad (3)$$

$$e_t = p_t - E(p_t \mid t-1) \qquad (4)$$

The poverty does not adjust instantaneously , following too a mechanism of propagation.

$$P_t = a'(L)\, U_{t-1} + b'(L)\, p_{t-1} + c'(L)\, P_{t-1} + v_t$$

Contemporaneous Effects of Shocks

Efeitos	Pre: $U \mid \pi$	Pre $\pi \mid U$	Pos $U \mid \pi$	Pos $\pi \mid U$
$\varepsilon \Rightarrow U$	-0.013	0	-0.046	0
$\mu \Rightarrow \pi$	0	-3.058	0	-0.280

Reparametrized Model

$U_{t+h} = a_0\varepsilon_{t+h} + a_1\varepsilon_{t+h-1} + a_2\varepsilon_{t+h-2} + \ldots\ldots + b_0\mu_{t+h} + b_1\mu_{t+h-1} + b_2\mu_{t+h-2} + \ldots\ldots$

$\pi_t = c_0\varepsilon_{t+h} + c_1\varepsilon_{t+h-1} + c_2\varepsilon_{t+h-2} + \ldots\ldots + d_0\mu_{t+h} + d_1\mu_{t+h-1} + d_2\mu_{t+h-2} + \ldots\ldots.$

$P_t = f_0\varepsilon_{t+h} + f_1\varepsilon_{t+h-1} + f_2\varepsilon_{t+h-2} + \ldots\ldots + g_0\mu_{t+h} + g_1\mu_{t+h-1} + g_2\mu_{t+h-2} + \ldots\ldots.$

Impulse Response Functions – Parte 1

<u>Notation</u>:

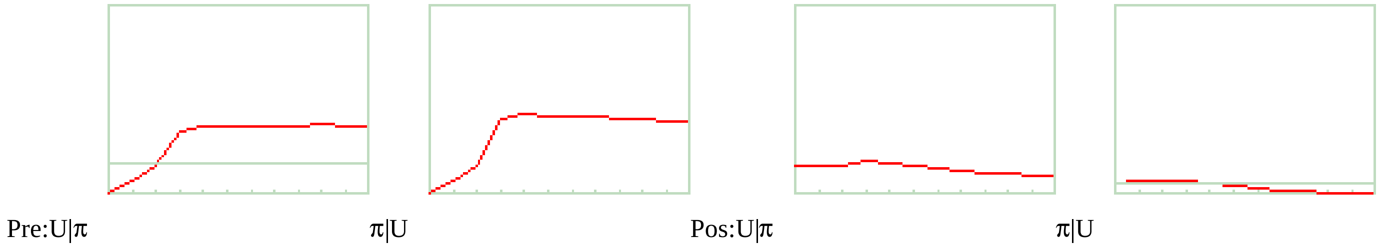
Pre - Pre Real plan period (1982-94)

Pos - Post Real plan period (1994-98)

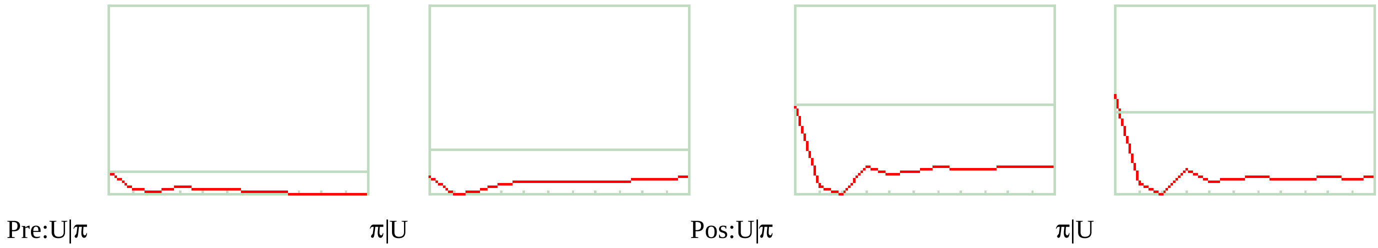
π|U - Discretion

U|π - Commitment

Effect on Unemployment up to 12 months after Unexpected Increase in Inflation



Effect on Inflation up to 12 months after Unexpected Increase in Unemployment



Impulse Response Functions – Parte 2

<u>Notation</u>:

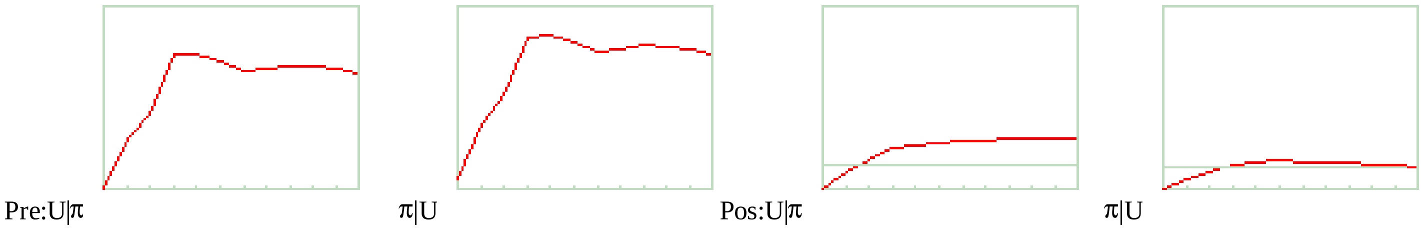
Pre - Pre Real plan period (1982-94)

Pos - Post Real plan period (1994-98)

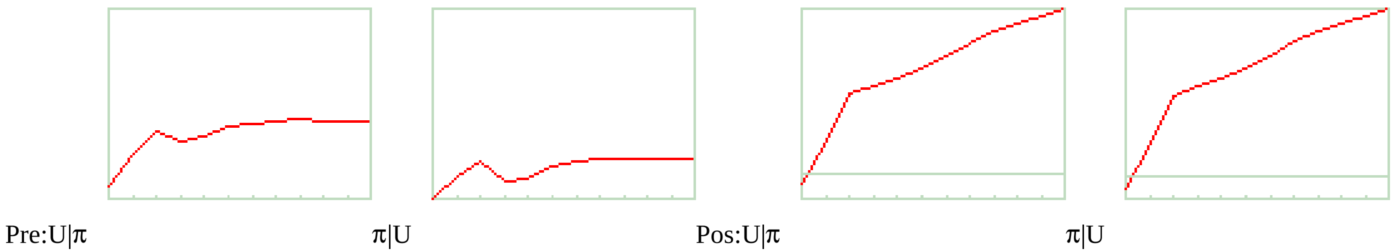
p|U - Discretion

U|p - Commitment

Effect on Poverty up to 12 months after Unexpected Increase in Inflation



Effect on Poverty up to 12 months after Unexpected Increase in Unemployment



Variance decomposition of forecast 12 months after unexpected shocks *

	Before Real Plan - Discretion			After Real Plan Commitment		
	Inflation	Unemployment	Poverty	Inflation	Unemployment	Poverty
Ch Inflation	87	15	60	33	2	3
ChUnemployment	13	85	12	67	98	80

Source :PME/IBGE

* Infation or Unemployment

Variance decomposition of forecast 12 months after unexpected shocks *

	Before Real Plan - Discretion			After Real Plan - Commitment		
	Inflation	Unemployment	Poverty	Inflation	Unemployment	Poverty
Ch Inflation	97	5	47	40	0	0
Ch Unemployment	3	95	24	60	100	82

Source : PME?IBGE

* Infation or Unemployment

Main Results:

Previous to the Real Plan

- Inflation and unemployment rates fluctuated in an independent manner. Shocks in these variables explained, respectively, 87% and 85% of its respective variations.
- An unexpected increase in inflation rate, corresponded to the bigger part (60%) of the poverty rate variance

After the Real Plan:

- Unemployment shocks are the most important source of inflation variance (67%) - fall of the so-called inflationary inertia.
- Unemployment shocks explain 98% of unemployment variance - a phenomenon that may be called inertial unemployment, that is, unemployment explained by its own past.

Main Results :

After the Real Plan (cont):

- Unemployment shocks explain 80% of poverty variance. The results are consistent with the notion that in the post-Real, the direct fight against unemployment is a key element for the battle against poverty.

- On the other hand, the recourse of increasing inflation impacts only 2% of unemployment and 3% of poverty variances respectively. The results taken at face value, indicate the social undesirability of increasing inflation.

Extensions:

- verify the robustness of the results.

- extend the model to incorporate a regime (identification hip) that set targets with respect poverty. The purpose of social targets would be to place the poor on the list of macroeconomic priorities.