



มุ่งมั่นพัฒนา สร้างคุณค่าเพื่อไทย

Macroeconomic Model

under

Flexible Inflation Targeting Framework

Role and Usefulness of Models

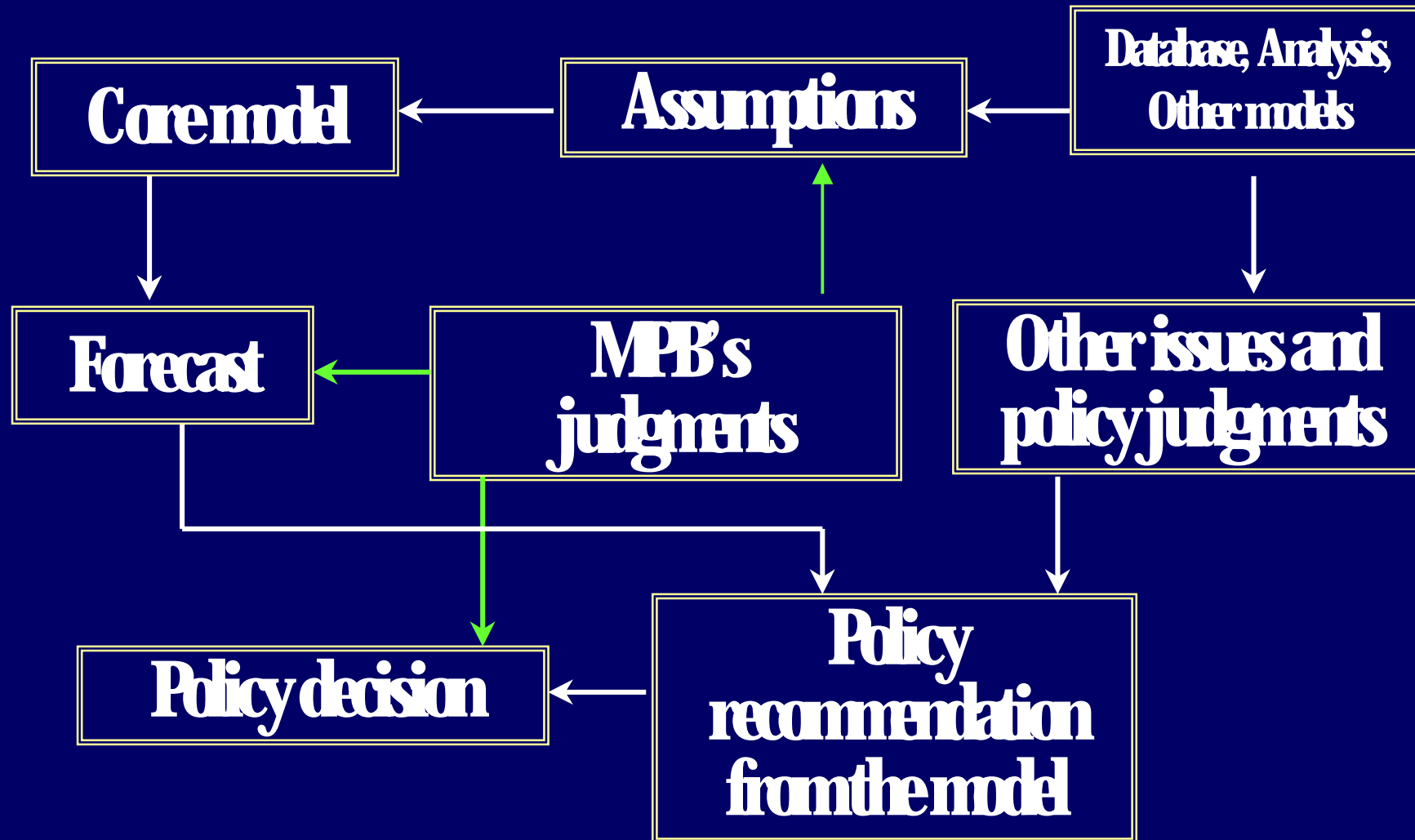
Role of Models

- Models are a tool.
- Models average past behavior.
- Models are consistent and systematic framework.
- A Model forecast is based on assumptions.
- Should be used with MP Board's judgment.

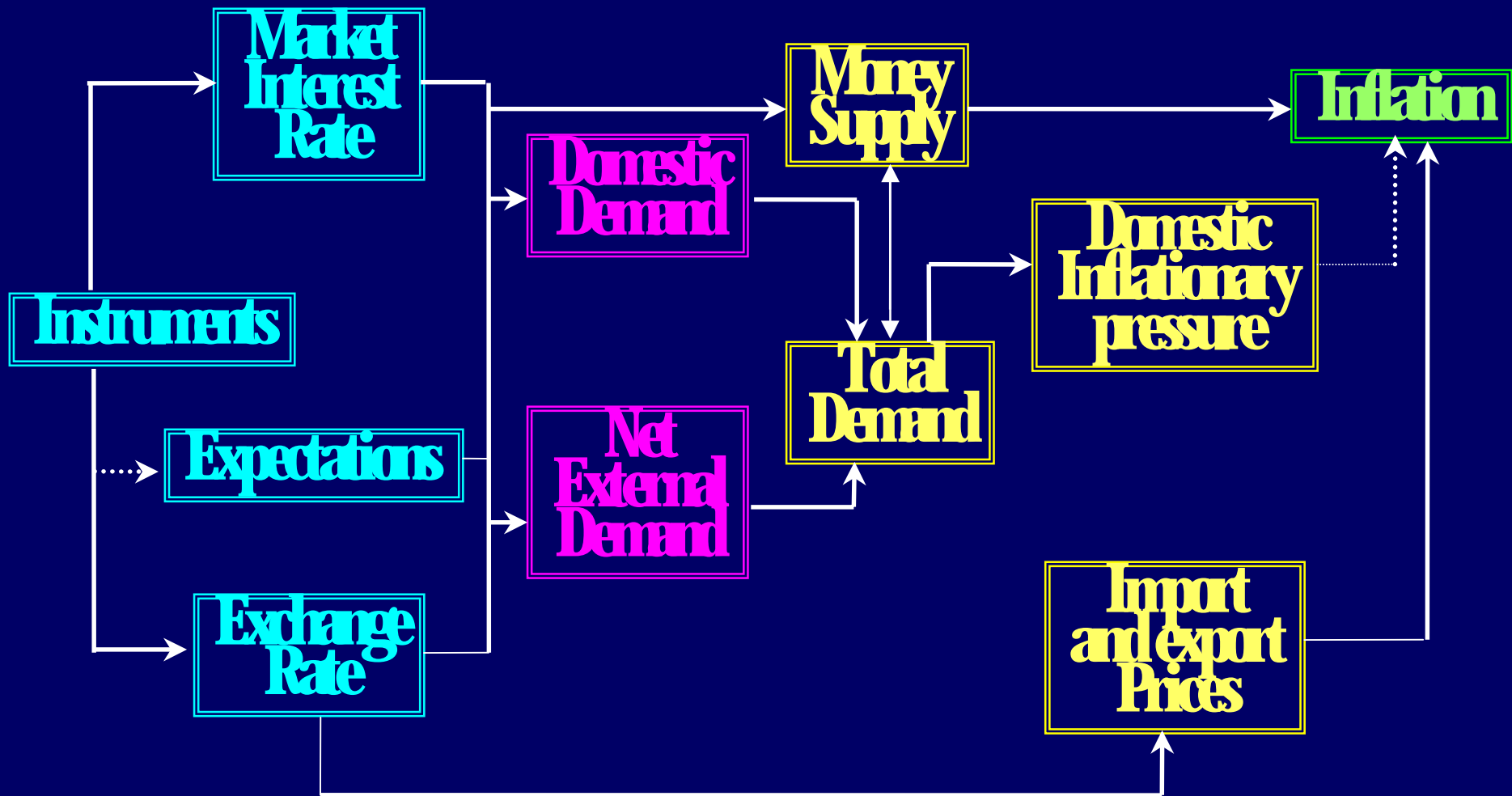
Usefulness of Economic Models

- Help in forecasting macroeconomic picture.
- Assist in evaluating effects of policies and external factors on the economy.

Models, Forecasts and Policy

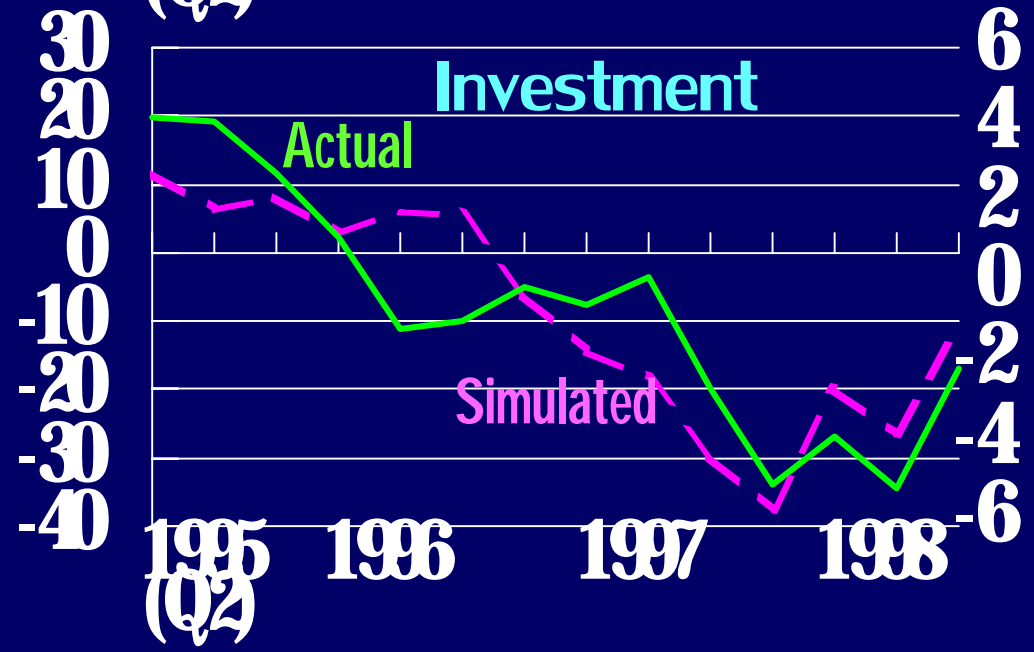
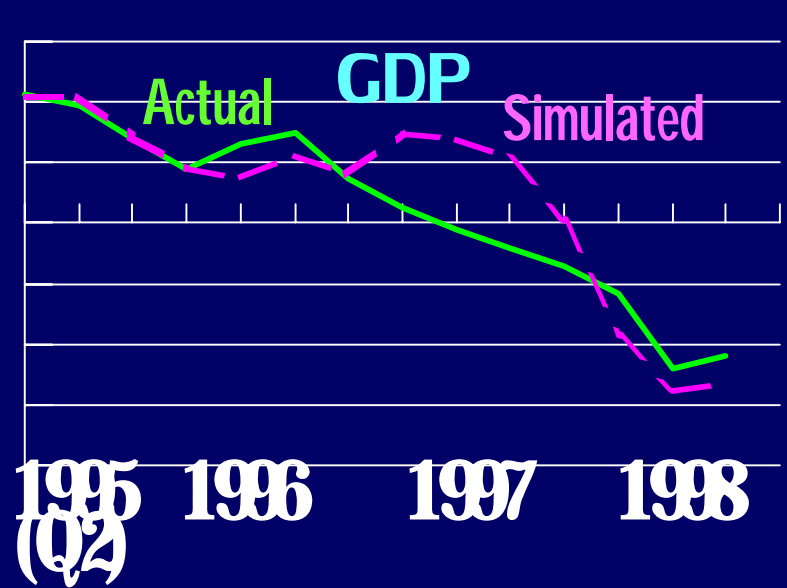
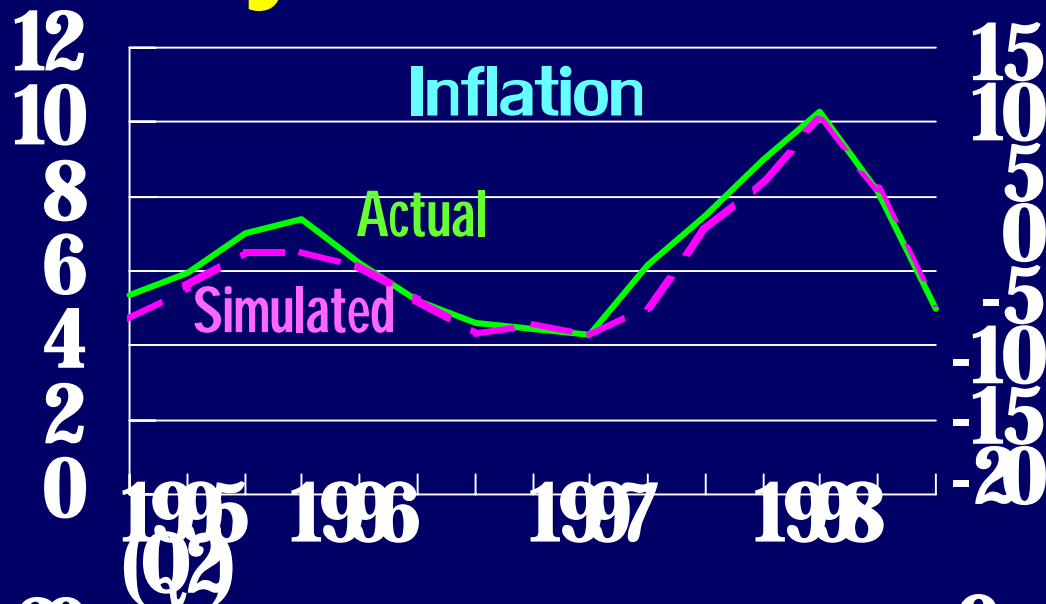


Core Model - *the transmission mechanism*



Model Validity Test

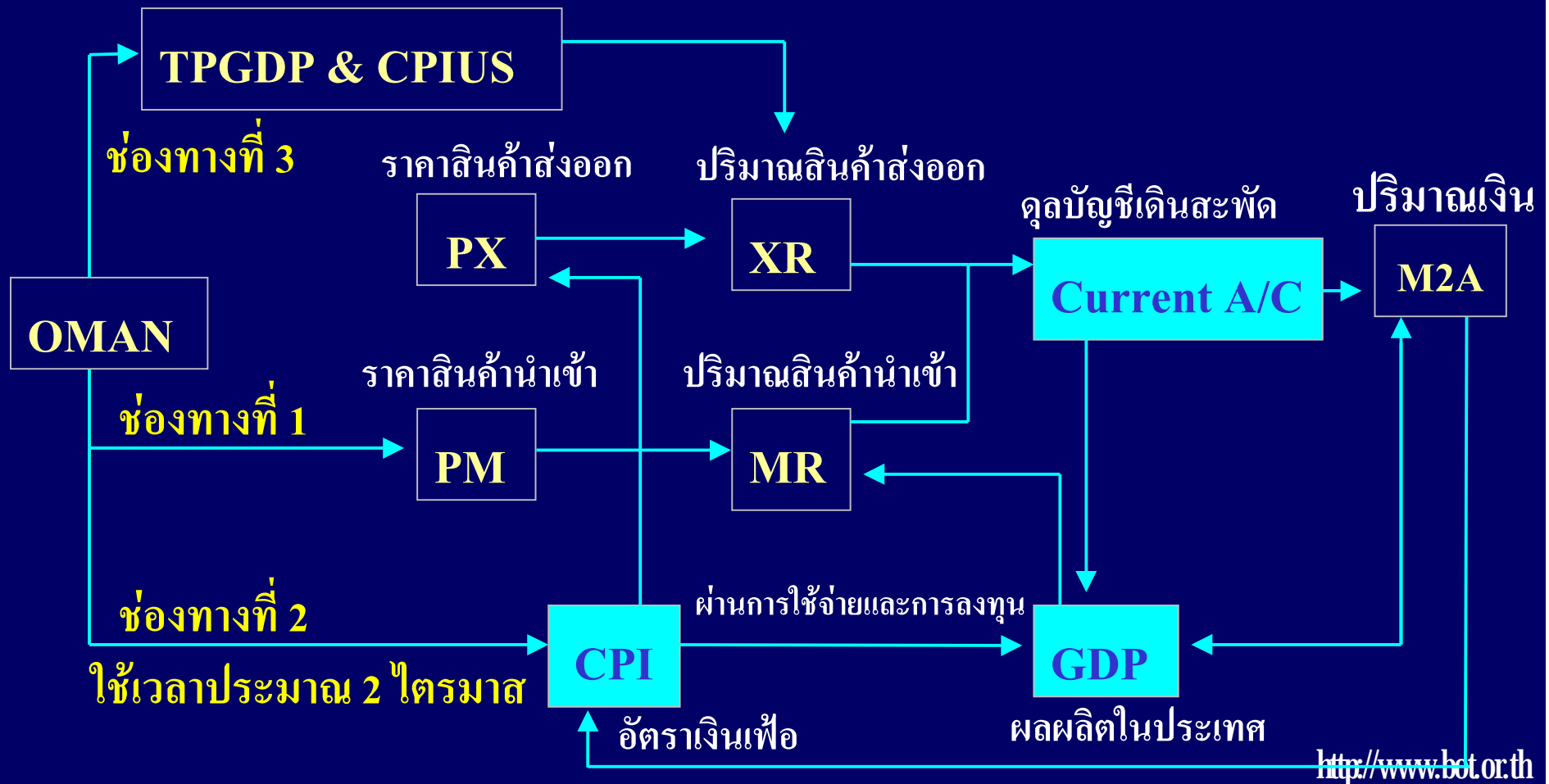
Dynamic Historical Simulation



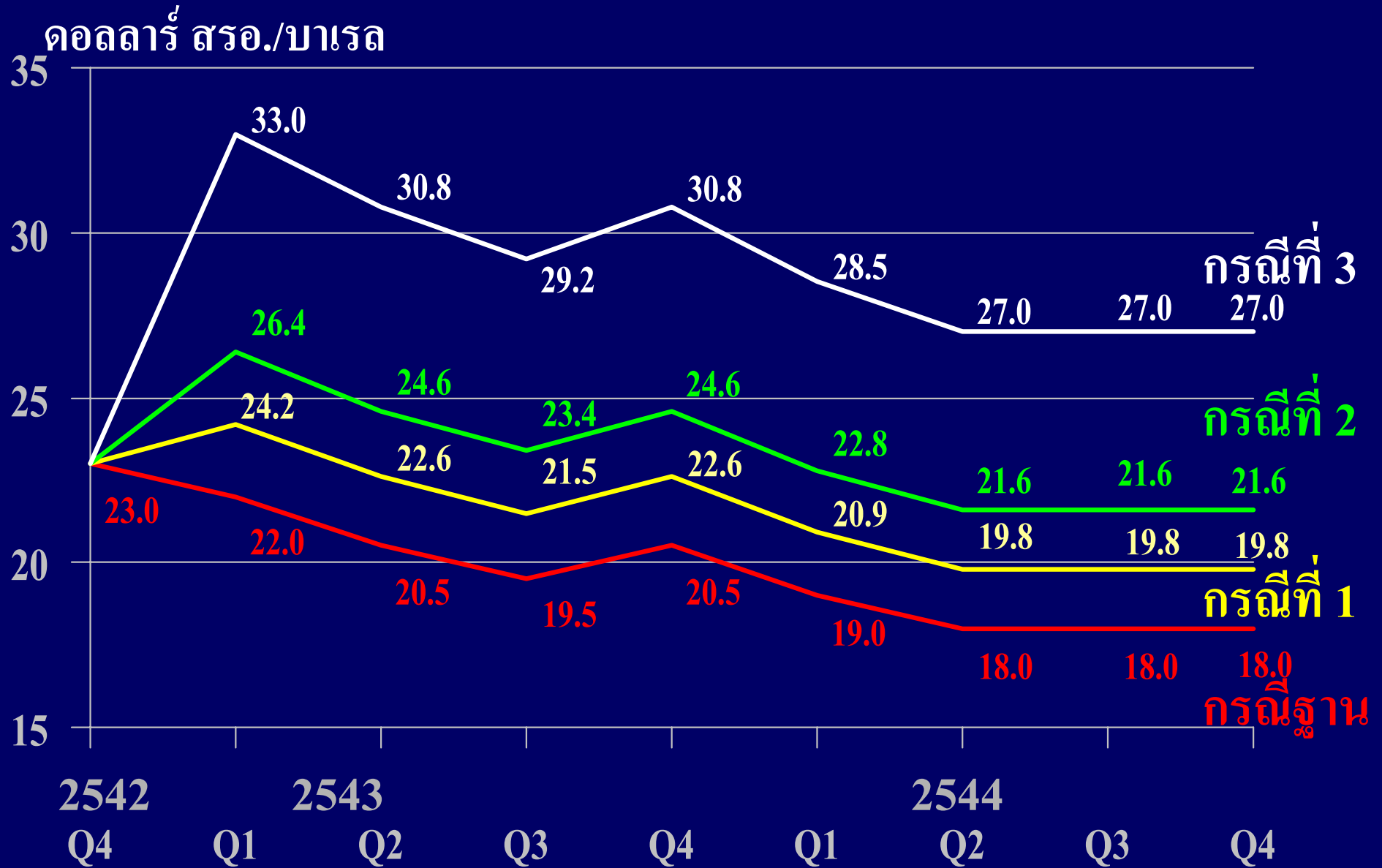
ภาพแสดงกลไกผลกระทบของการเปลี่ยนแปลงราคาน้ำมัน

ต่อตัวแปรเศรษฐกิจมหภาค

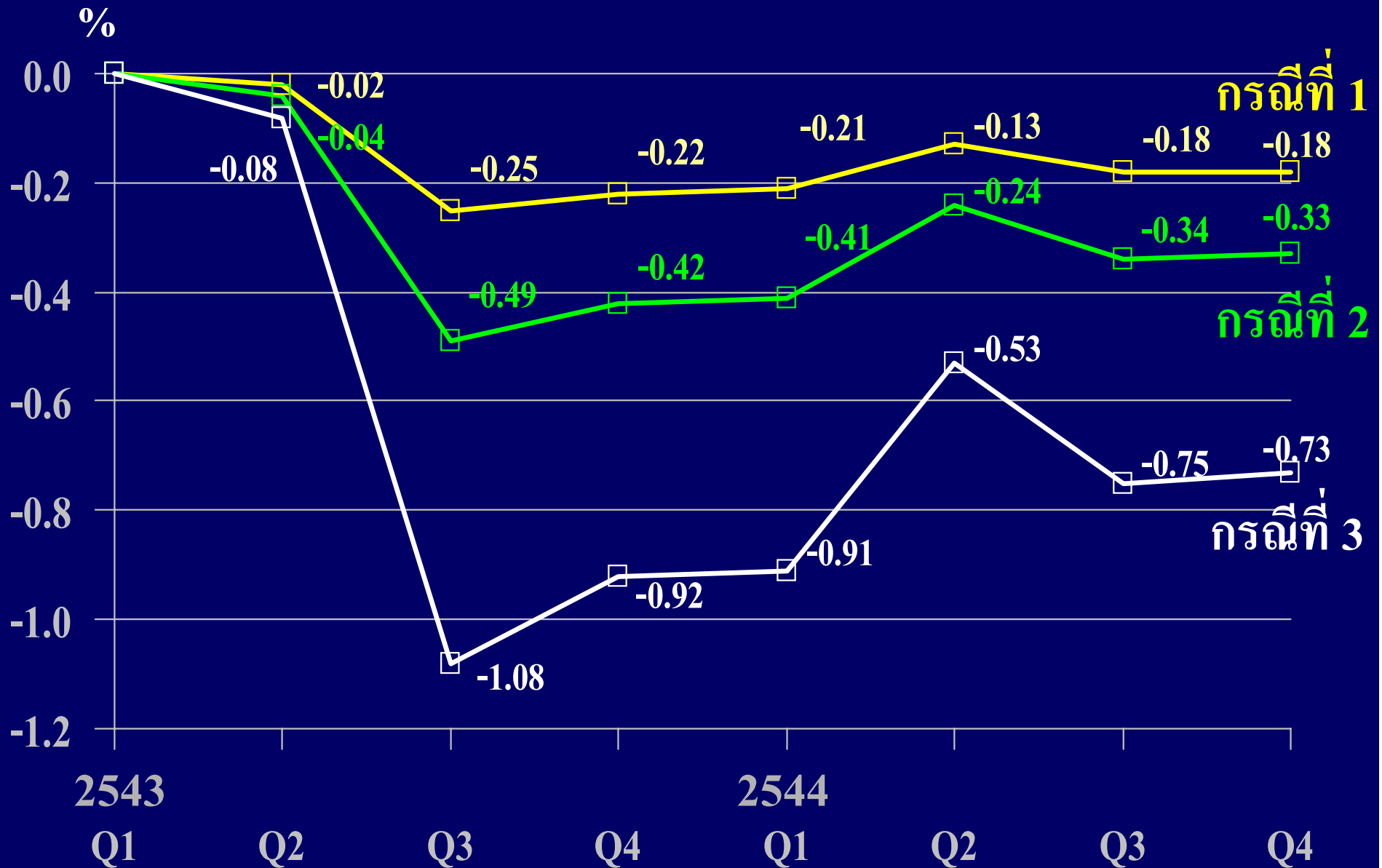
ดัชนีการเจริญเติบโตทางเศรษฐกิจของประเทศคู่ค้าสำคัญ
และดัชนีราคาของประเทศคู่ค้า



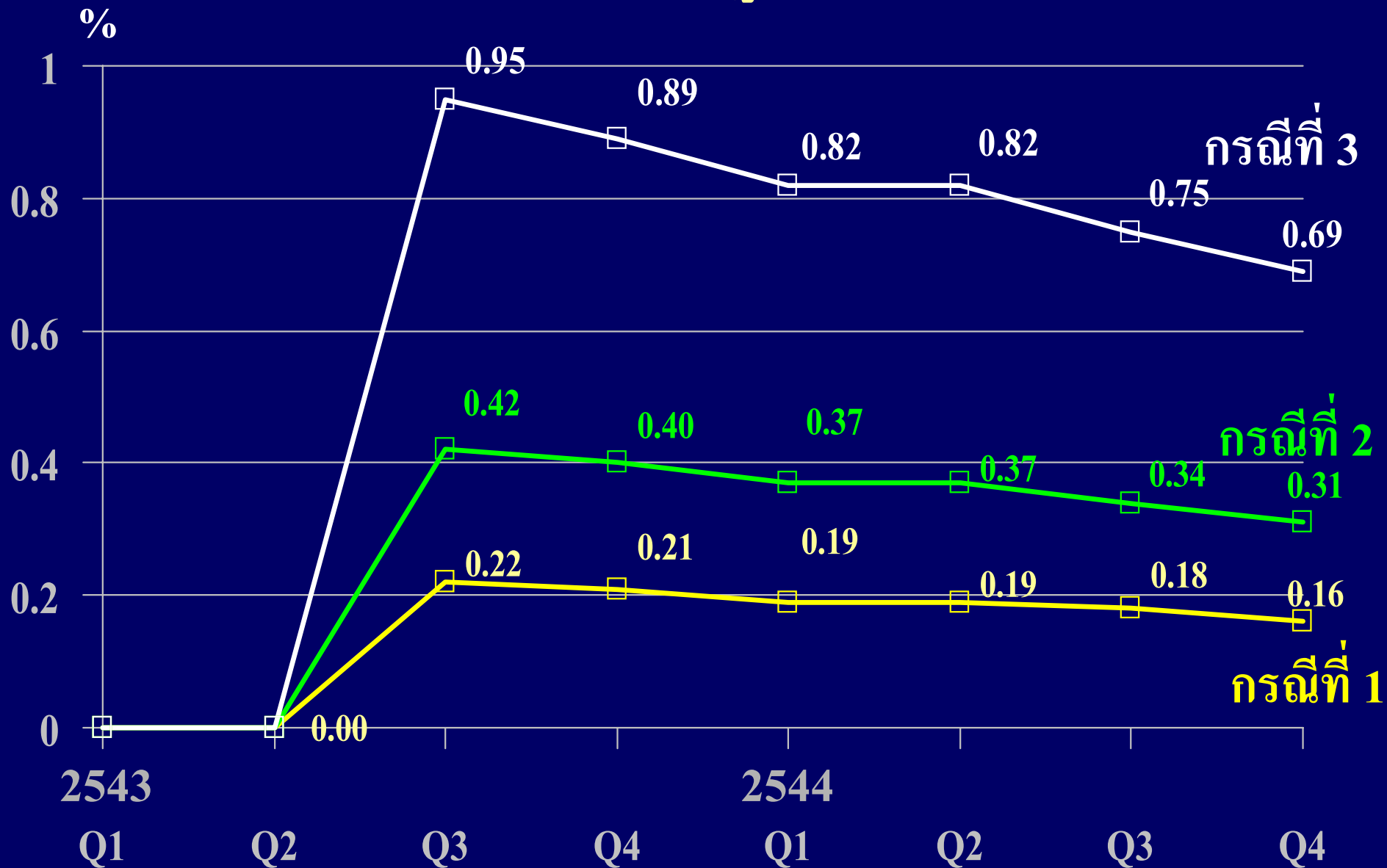
ราคาน้ำมัน OMAN กรณีต่างๆ



การเปลี่ยนแปลงจากกรณีฐานของการเจริญเติบโตทางเศรษฐกิจ



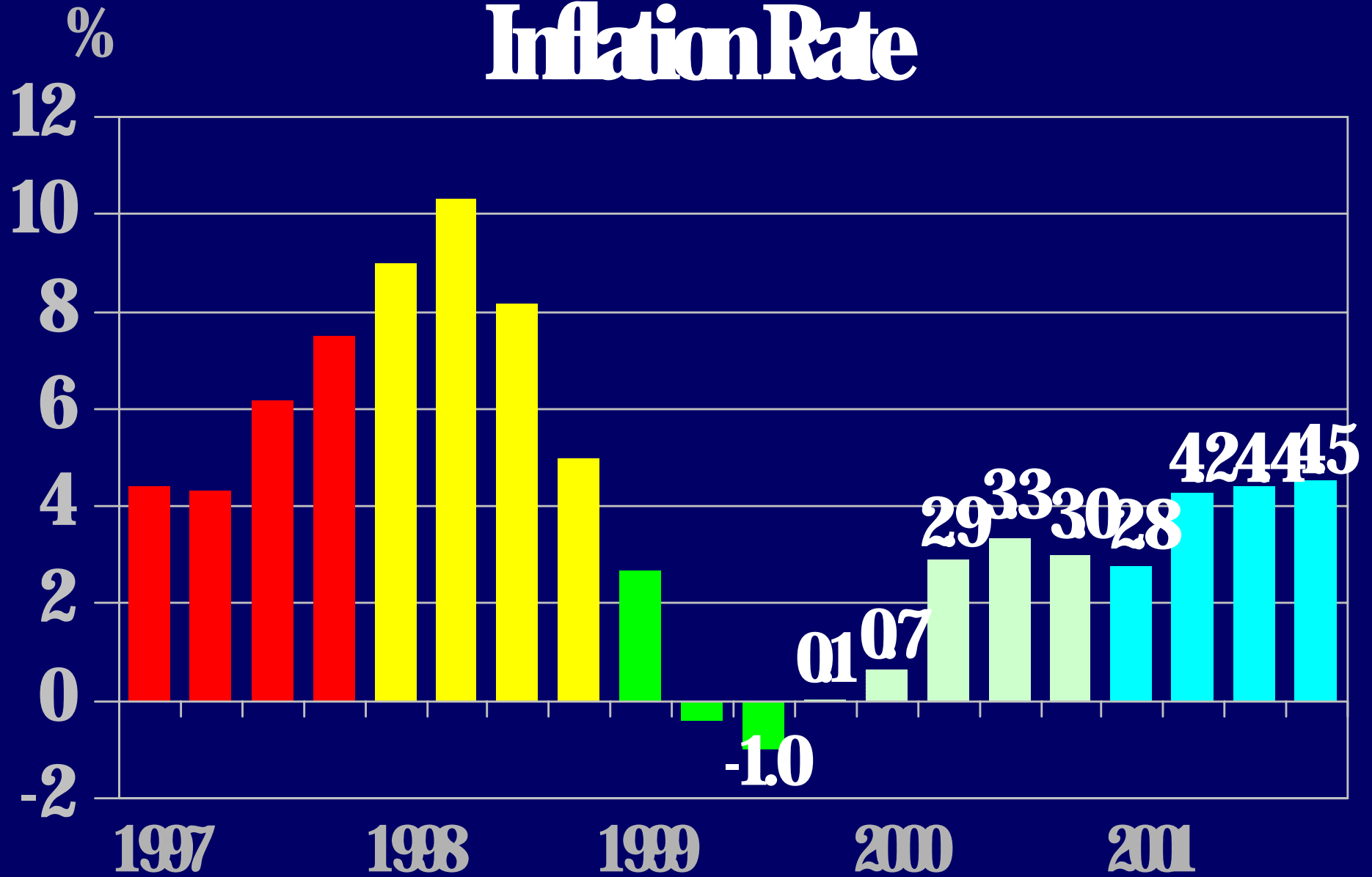
การเปลี่ยนแปลงจากกรณีฐานของอัตราเงินเฟ้อ



Inflation Forecast

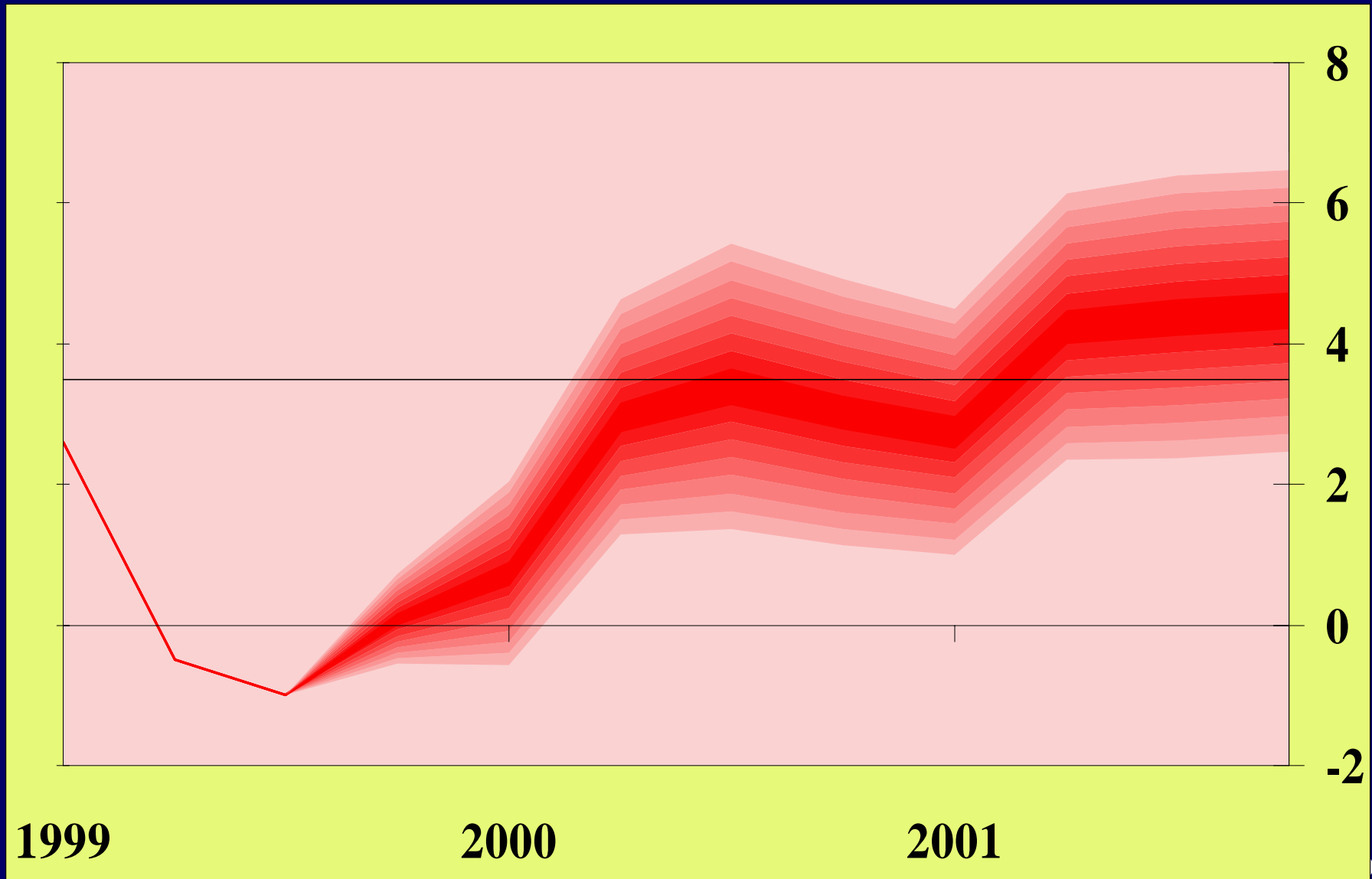
1999Q4 - 2001Q4

Inflation Rate



Inflation Projection

yoy percentage changes



Probability Distribution of Inflation Forecasts

Period	Inflation Rate(%)			
	less than 0	0-35	greater than 35	Total
1999: Q4	46	54	0	100
2000: Q1	32	63	5	100
Q2	8	52	40	100
Q3	9	43	48	100
Q4	10	48	42	100
2001: Q1	10	53	37	100
Q2	4	34	62	100
Q3	4	32	64	100
Q4	3	31	65	100

Policy Optimization Model

Policy Recommendation from the Model

Minimize Loss Function :

$$L(\pi_t, Y_t, r_t) = (1/2)[\gamma (\pi_t - \pi^*)^2 + \rho (Y_t - Y^*)^2 + \upsilon (r_t - r_{t-1})^2]$$

where $\pi_t - \pi^*$ = The difference between forecasted inflation and targeted inflation at time t.

$Y_t - Y^*$ = The difference between forecasted output and potential output at time t

$r_t - r_{t-1}$ = The difference between interest rate at time t and time t-1

Policy Recommendation from the Model

Minimize Loss Function :

$$L(\pi_t, Y_t, r_t) = (1/2)[\gamma (\pi_t - \pi^*)^2 + \rho (Y_t - Y^*)^2 + \upsilon (r_t - r_{t-1})^2]$$

where γ = Weight given to Inflation

ρ = Weight given to Output Gap

υ = Weight given to Interest Rate Variation

Minimize Loss Function

(Over the period affected by the change in monetary policy)

$$L(\pi_t, Y_t, r_t) = (1/2)[\gamma (\pi_t - \pi^*)^2 + \rho (Y_t - Y^*)^2 + \nu (r_t - r_{t-1})^2]$$

$$\text{Min } \sum_{i=0}^n L(\pi_{t+i}, y_{t+i}, r_{t+i-1})$$

Subject to the Macroeconomic Model

Technical Limitations of the Model

- Availability of historical data (1993 - 1999).
- Stability of coefficients.

α Therefore, the model should be used with care.

Model needs to be improved depending on:

- New data become available.
- The opportunity in developing and improving the model.
- Changes in the economic and social environment.
- New research findings in economics and new techniques in econometrics.