Discussion of

Is Applied Monetary Policy Analysis Hard?

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Macroeconomics and Reality, 25 years later

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Question: Is any change in monetary policy analysis progress or regress?

Answer: We don't know

Argument:
Monetary policy analysis is HARD (no guarantee for the sequence of formal solutions of "simple" problems to converge to the "ideal")

All of our models are *grossly deficient* with respect to the "ideal"

Proposal: Listing and recognizing the *gross deficiencies* is progress

Strategy 1

Discuss the epistemologic foundations of the economic science

Go back to Popper:

"the scientific status of a theory is its testability"

Use this criterion to discuss the thesis of the paper

Strategy 2

Talk about my work

(and its relation with some aspect of the paper)

DSGE models: progress or regress

2 problems:

1. **Identification** - different frictions generate the same fit

2. **Many classes of model** - different models for different tasks

   forecast vs. policy analysis

1. Identification

Canova-Sala, 2005

In DSGE models, parameters are often non-identified

Identification may depend on the objective function chosen (likelihood vs. distance)

$$x_t = \frac{\gamma}{1+\gamma} x_{t-1} + \frac{1}{1+\gamma} E_t x_{t+1} - \frac{1}{\varphi}(i_t - E_t \pi_{t+1}) + e_{1t}$$

$$\pi_t = \frac{\omega}{1+\omega\beta} \pi_{t-1} + \frac{\beta}{1+\omega\beta} E_t \pi_{t+1} + (\varphi + \vartheta_n) \frac{(1-\zeta_p)(1-\beta\zeta_p)}{(1+\omega\beta)\zeta_p} x_t + e_{2t}$$

$$i_t = \phi_r i_{t-1} + (1 - \phi_r)(\phi_\pi \pi_t + \phi_x x_t) + e_{3t}$$

where:

γ: habit formation
ω: indexation to past inflation in price setting
ζ_p: price stickiness
φ: CRRA
ϑ_n^{-1}: labor supply elasticity

Computing the distance function

1. Calibrate the model with θ_0

2. Generate theoretical impulse responses: $A(\theta_0)$

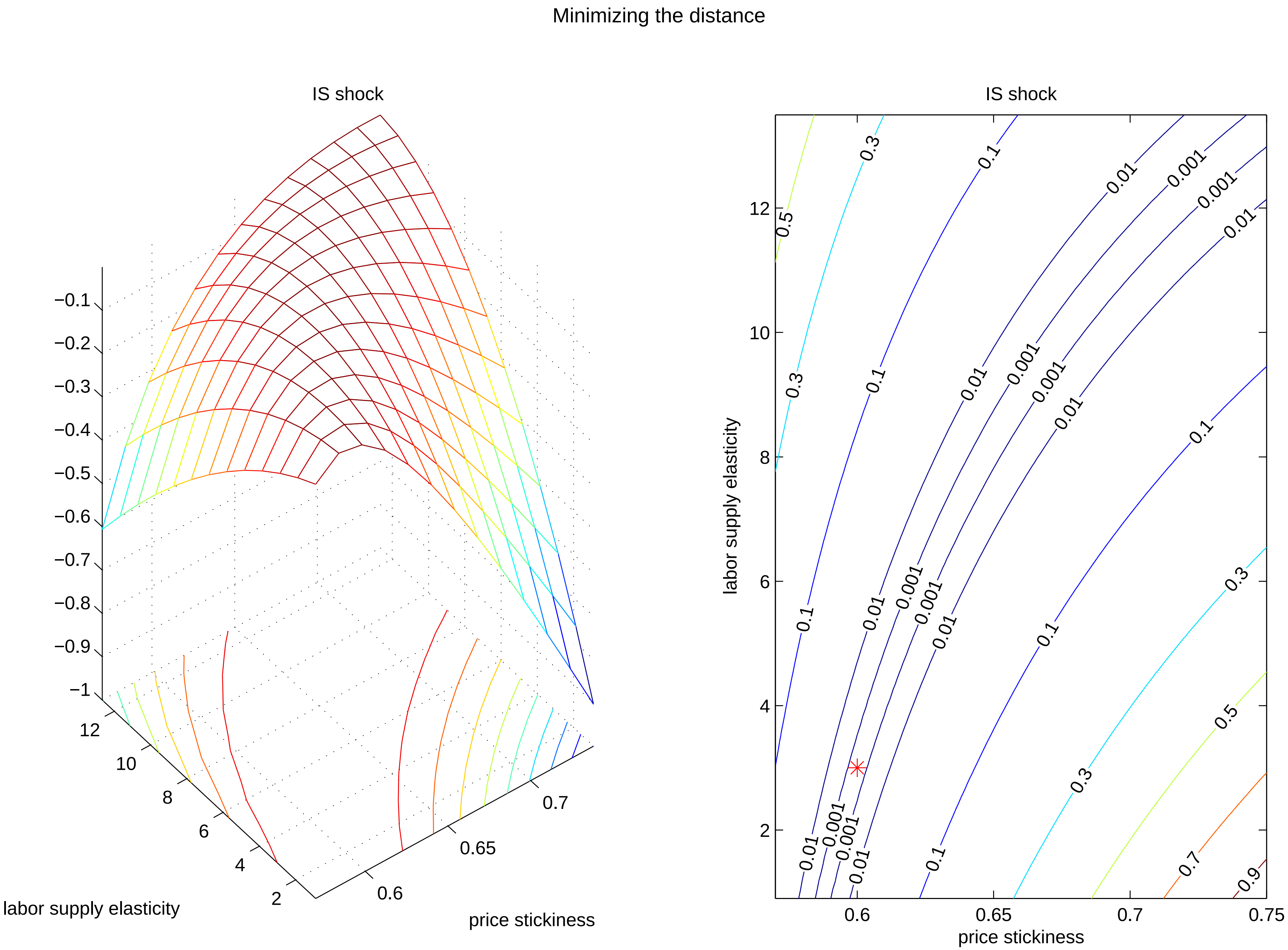
3. Compute the distance: $D(\theta) = \|(A(\theta_0) - A(\theta))\|$

4. OK if: $D(\widehat{\theta}) = 0 \Longleftrightarrow \widehat{\theta} = \theta_0$

5. If one estimates $\widehat{\theta}$ as:

$$\widehat{\theta} = argmin\|A(\theta_0) - A(\theta))\|$$

one obtains: $\widehat{\theta} \neq \theta_0$


Minimizing the distance
IS shock
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
−0.7
−0.8
−0.9
−1
12
10
8
6
4
2
0.6
0.65
0.7
labor supply elasticity
price stickiness
IS shock
0.3
0.1
0.01
0.001
0.001
0.01
0.5
0.3
0.1
0.01
0.001
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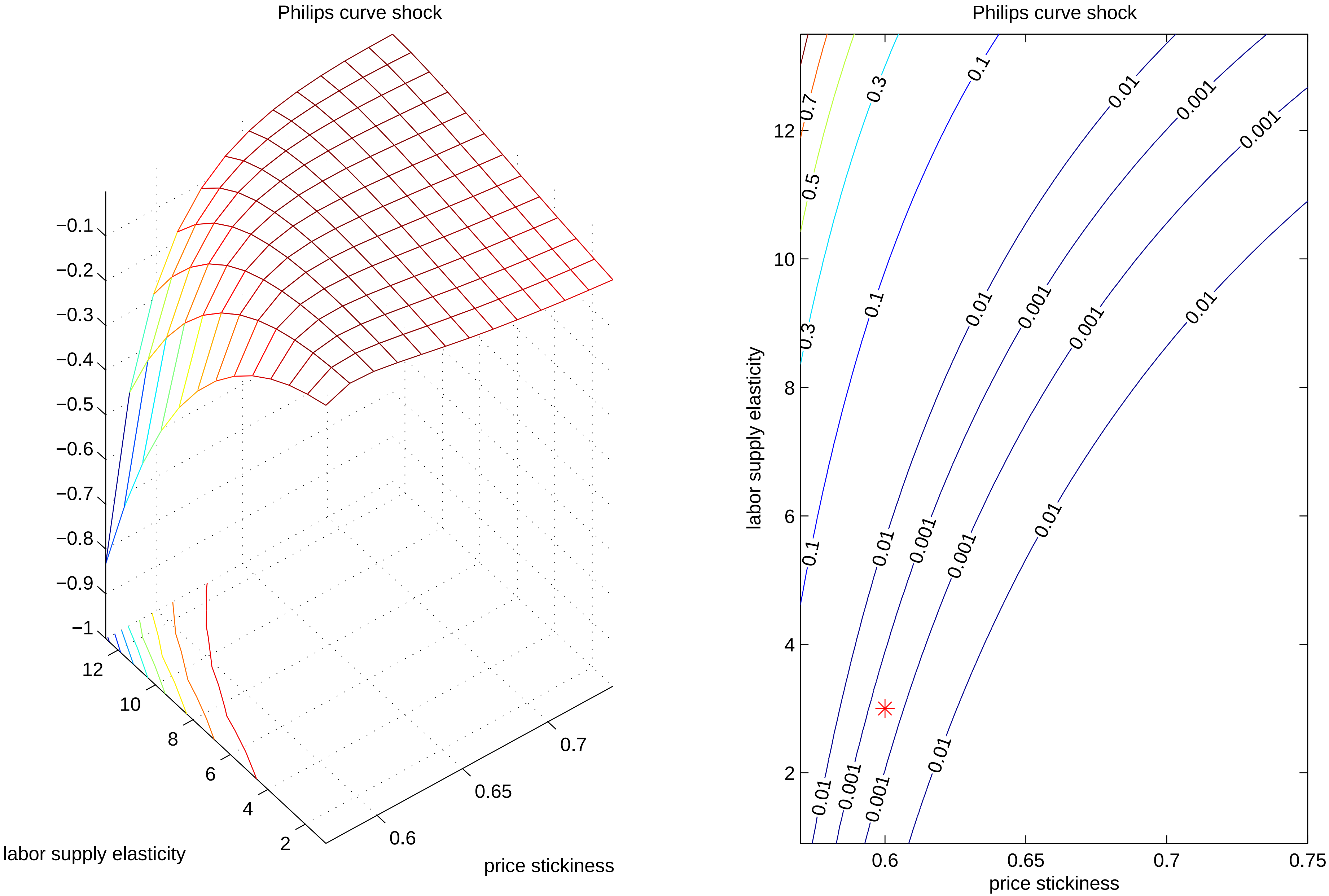
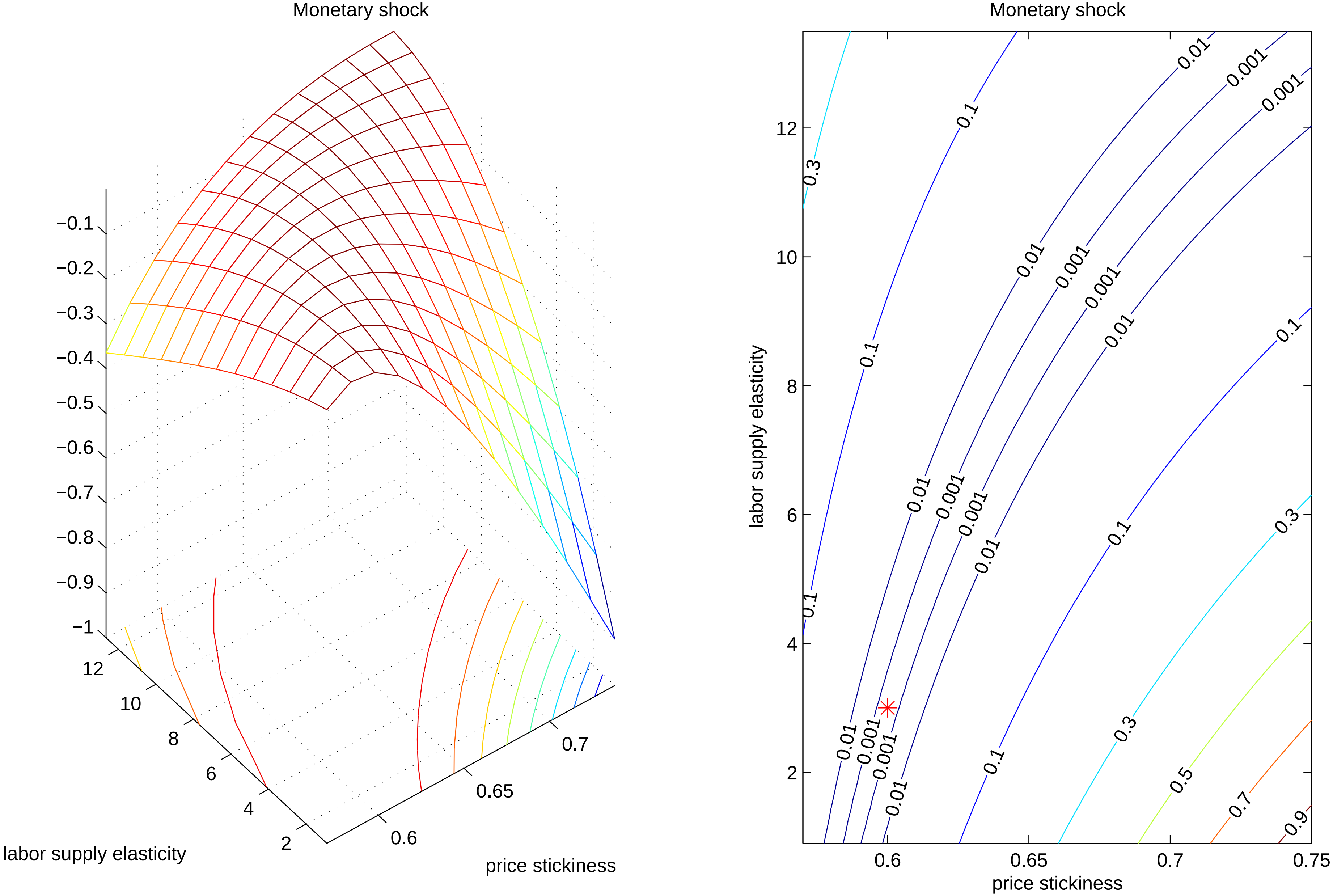
labor supply elasticity
price stickiness

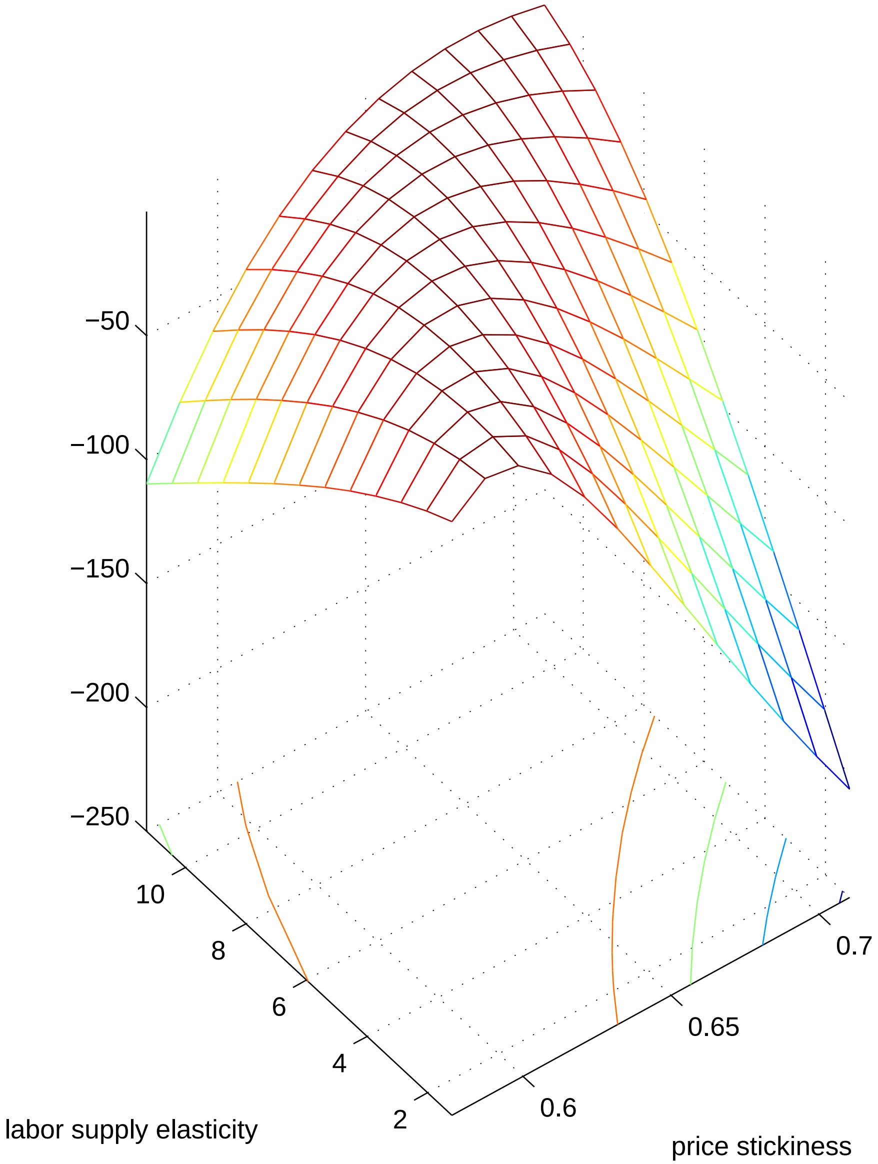
Minimizing the distance

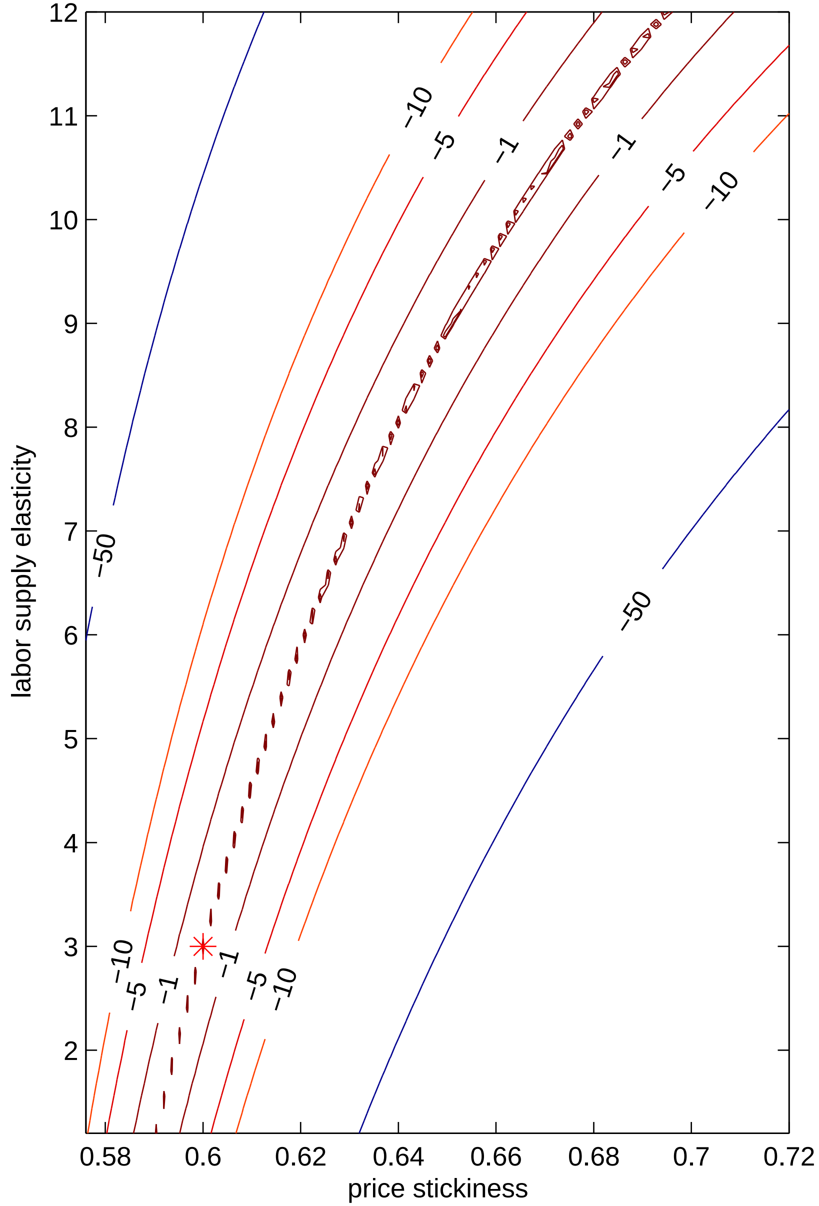


Minimizing the distance



Likelihood Function





2. The Structural Aspect of Forecasting

Factor models (large dataset + few pervasive shocks) are good forecasting models (Stock-Watson and Giannone,Reichlin and Sala)

Good reduced form of the economy

Use these results to improve structural modellling?

Discipline device for modelling: start with few pervasive shocks

3. My Preferred Weakness

Liu (*Econometrica, 1960*)

"An AR scheme for an error term as a part of a structural estimation is clearly unsatisfactory. [...] it amounts to a confession that an explanation for a systematic part of the movement in the variable to be explained has not been found."