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**COMPARISONS AMONG GASOLINE PRICE ASYMMETRIES
MULTI-COUNTRY AND MULTI-BASIS ANALYSIS**

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Overview

This paper compares asymmetries in domestic gasoline prices among four countries: USA, UK, France and Korea, in order to find out whether gasoline price asymmetry occurs globally during the period of steady crude oil price increase. Furthermore, this study analyzes price responses to not only international product market price but also the acquisition cost of crude oil, as bases for the analyses. Error correction models are estimated on monthly data of the period from January 2000 to December 2006. Empirical results indicates that multi-country comparison is necessary for the valuation of relative degree of any asymmetries that are found, and in order to analyze the degree and the type of price asymmetry correctly, one must compare results using different price bases for the comparison. .

Methods

We estimate an error correction model (ECM) to study asymmetric price adjustments since an ECM can provide a short-run adjustment and a long-run equilibrium relationship among variables.

$$\Delta R_t = \sum (\beta_i^+ \Delta C_{t-i}^+ + \beta_i^- \Delta C_{t-i}^-) + \theta_1 (R_{t-1} - \phi_1 C_{t-1}) + \varepsilon_t$$

$$\Delta R_t = \sum (\gamma_i^+ \Delta P_{t-i}^+ + \gamma_i^- \Delta P_{t-i}^-) + \theta_2 (R_{t-1} - \phi_2 P_{t-1}) + \varepsilon_t$$

R_t represents petroleum product prices, C_t denotes acquisition costs and P_t stands for international gasoline prices. The β_i^+ and γ_i^+ provide an estimate for the adjustment of cost and international price increases on net retail prices; conversely, the β_i^- and γ_i^- estimate the adjustment of the cost and price decreases.

Results

Empirical results of multi-country comparison show that domestic gasoline prices respond more fully to the increase of acquisition cost than the decrease in four countries. However, for the response to the changes of international gasoline prices, domestic gasoline prices adjust more fully to the decreases of international gasoline prices than the increases in USA, Korea and France and UK gasoline prices only increase more fully when international gasoline increase than decrease.

Conclusions

Results from the empirical analyses provides useful insight for the better understanding of transmission mechanism and market structure of petroleum product markets. We find different types of asymmetric pricing among the four countries and the two bases.

Therefore, multi-country and multi-basis comparisons are necessary in order to analyze the degree and the type of price asymmetry of petroleum product markets in any one country correctly.

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