



ESTIMATION OF DEMAND FUNCTION FOR CHEMICAL FERTILIZER WITH RESPECT TO FOOD CROPS IN JAVA ISLAND

ABSTRACT

This research entitles " Estimation of Demand Function for Chemical Fertilizer with Respect to food crops in Java Island" with the objectives to estimate the demand function for chemical fertilizer, to identify the factors affecting the demand and its trend, and to find out the short-run and long-run elasticities of the demand.

This research uses the secondary data in time series of 20 years (1981-2000), which obtained from some relevant institutions and it applied the Ordinary Least Square (OLS) to analyze data in form of static and dynamic model.

The results of analyses indicate that no present of multicollinearity in the models applied, but the problems of heteroskedasticity and autocorrelation existed in some models in both the static and the dynamic. These problems can be remedied successfully in Shazam Computer Software.

The data analyses of factors affecting the demand for chemical fertilizers provide that *firstly*, the demand for urea is significantly affected by its price, manure price, unhusked rice price and fertilizer subsidy policy; *secondly*, the demand for Triple Super Phosphate is definitely influenced by its price, manure price, annual rainfall and fertilizer policy subsidy; *thirdly*, the demand for Ammonium Sulfate is significantly affected by only its price and manure price; *finally*, the demand for Potassium Chloride is meaningfully impacted on by its price, manure price and annual rainfall. Furthermore, the price elasticities of chemical fertilizer demands are inelastic, except for only Triple Super Phosphate is characterized elastic.

The trend analyses of the chemical fertilizer demand provide that the urea demand is significantly increase, but the trend for Triple Super Phosphate is relative declined. Meanwhile, the demand for Ammonium Sulphate and Potassium Chloride do not show the clear trends. Totally, the aggregate demand for the chemical fertilizers is hypothesized that it has had relatively increasing trend for food crops in Java Island.

Key words: Estimation, Demand Function, Chemical Fertilizer, Food Crops



ESTIMASI FUNGSI PERMINTAAN PUPUK KIMIA UNTUK TANAMAN PANGAN DI PULAU JAWA

INTISARI

Penelitian ini berjudul "Estimasi Fungsi Permintaan Pupuk Kimia untuk Tanaman Pangan di Pulau Jawa" dan tujuannya adalah (1) mengestimasi fungsi permintaan pupuk kimia, (2) mengidentifikasi faktor-faktor yang berpengaruh terhadap permintaan pupuk tersebut, dan (3) mengetahui elastisitas permintaan pada jangka pendek and panjang.

Penelitian ini menggunakan data urutan waktu selama 20 tahun (1981-2000) yang dikumpul dari institusi relevan dan data diolah dengan metode Kuadrat Terkecil Biasa (Ordinary Least Square) dalam baik bentuk statis maupun bentuk dinamis.

Hasil analisis menunjukkan bahwa tidak ada persoalan multicollinearitas, tetapi problem heteroskedastisitas dan autokorreralasi ditemukan di beberapa model baik bentuk statis maupun dinamis. Permasalahan tersebut dapat diobati dengan sukses dalam program Shazam.

Analisis data menunjukkan bahwa (1) permintaan urea dipengaruhi secara nyata oleh harganya sendiri, harga pupuk kandang, harga gabah dan kebijakan subsidi pupuk; (2) permintaan TSP dipengaruhi secara signifikan oleh harganya sendiri, harga pupuk kandang and kebijakan subsidi pupuk; (3) permintaan ZA ditentukan oleh harganya sendiri and harga pupuk kandang; dan terakhir permintaan KCL dipengaruhi secara nyata oleh harganya, harga pupuk kandang dan curah hujan tahunan. Lagipula elastisitas harga dari permintaan pupuk kimia bersifat inelastic, kecauli elastisitas harga dari permintaan TSP yang dinyatakan elastis.

Analisis trend permintaan pupuk kimia menunjukkan bahwa permintaan pupuk urea berkencenderungan meningkat secara signifikan, sebaliknya permintaan TSP ditemukan relatif menurun. Sedangkan permintaan ZA dan KCL tidak menunjukkan kecenderungan jelas. Secara total, permintaan agregat pupuk kimia dapat dihipotesiskan bahwa kecenderungannya relatif meningkat untuk tanaman pangan di pulau Jawa.

Kata-kata kunci: Estimasi, Fungsi Permintaan, Pupuk Kimia, Tanaman Pangan

