Name __Mr. Key__________ Mike Lovell
Sign the pledge: 2:00-5:00, December 17, 1996
No Aid; No Violations __________ Room PAC 107

Econ 105: Final Examination *Post Mortem*

Part 1: Compare and contrast five of the following pairs of concepts.

1.1 Efficient versus equitable allocation of resources. The Edgeworth Box Diagram helps provide a precise explanation of the distinction between these two concepts.

1.3 Open market operations versus changes in the discount rate: The stronger answers recognized that changes in the discount rate are not nearly as significant as open market operations because banks are discouraged from borrowing intensively from the Fed.

1.4 Monopoly versus monopsony: Several students forgot that monopsony refers to one buyer purchasing goods from many suppliers.

Part II: Suppose that in Simple Land the consumption function is
$C = 10 + .8Y$, that $Y = C + I + G$, and that $I = 5$ and $G = 15$.

a. The equilibrium levels of Y and C are 150 and 130.

b. Suppose that government spending increases from 15 to 30 while I is unaffected. What will happen to Y and C? C = 190 and Y = 225

c. The government spending multiplier, for this problem, is $\Delta Y/\Delta G = 1/(1-0.8)$

2.2 Suppose that $I = 15 - 50r$, where r is the rate of interest. (Thus if r = 20% investment will be 5). The reduced form equation is $Y = 125 + 5G - 250r$

Honors Option: The Stone-Geary utility function[1] is an interesting generalization of the Cobb-Douglas production function. The utility maximizing consumer faces the problem of maximizing $U = (A-k_1)^{\lambda}(B-k_2)^{\lambda'}$ (which is defined for $A > k_1$ and $B > k_2$) subject to the constraint that $p_aA + p_bB = I$ The k_i may be interpreted as the minimum subsistence quantity required of each good.

While one can solve this maximization problem directly, the derivation is tedious and only two students obtained the correct answer. An alternative strategy is to shift coordinates to obtain the standard Cobb-Douglas problem by substituting newly defined variables $A^*=A-k_1$ and $B^*=B-k_2$ into both the utility function and the income constraint so as to obtain the transformed problem of maximizing $U = A^{*\lambda}B^{*\lambda'}$ subject to the constraint $p_aA^* + p_bB^* = I^*$, where $I^* = I - p_ak_1 - p_bk_2$. The problem has now been reduced to the standard Cobb-Douglas form (see problem 2 of Problem Set #3) with solution $A^* = [\lambda/(\lambda+\lambda')]\, I^*/p_a = [\lambda/(\lambda+\lambda')]\, [I/p_a - k_1 - k_2(p_b/p_a)]$.

Implication: Demand will be a linear function of real income and relative prices if consumers are maximizing a Stone-Geary utility function. This facilitates the econometrician's task of estimating the demand function empirically.

Please Note: You should <u>*not*</u> take E271, Micro Economic Analysis, from me when I teach it in the fall semester of 1997-98 because much of the presentation will be repetitious of materials you have studied in E105. Take E271 from someone else in a different semester!

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[1] Richard Stone, "Linear Expenditure Systems and Demand Analysis, *The Economic Journal*, 1954