

**Nobel Prize in Economics**  
October 11, 2000

Dear All:

The Nobel Prize in economics was announced this morning. Despite my efforts and other people's to predict the prize this year, we were wrong.

**WINNERS:** James Heckman (CHICAGO) and Daniel McFadden (UC Berkeley)

**ON DAN MCFADDEN**

**CONTRIBUTION:** Dan McFadden was given the prize for his development of theory and methods for analyzing discrete choice models. Thus, he is primarily developed the statistical and mathematical rationales for certain tests that were used by him and many other economists to test theories and behavior. Dan's papers covered a wide range of subjects. For instance, if I want to understand what effect pollution will have on a mother's decision to move to a city, how can I measure that? I have a lot of data, but what do I do with that? He helped develop the multi-logit econometric model to properly test these things.

He also contributed many papers to the area known as "micro theory". For instance, he wrote papers on estimating the "elasticity of demand" in production functions, etc. Microeconomics is one of the core building blocks of an understanding of economics. He also wrote papers in mathematical economics.

**BACKGROUND:** Dan received his BA and Ph.D. from the University of Minnesota in 1957 and 1962 respectively. He was a professor at MIT for awhile and then eventually landed at Berkeley, despite visits to MIT from time to time.

**PAPERS OF NOTE:** (1) "Estimation Techniques for the Elasticity of Substitution and other Production Parameters" with M. Fuss  
(2) "The Measurement of Urban Demand"  
(3) "Modelling the Choice of Residential Location"  
(4) "Conditional Logit Analysis of Qualitative Choice Behavior"  
(5) "Specification Tests for the Multinomial Logit Model" with J. Hausman  
(6) "Large Sample Estimation and Hypothesis Testing" with W. Newey and R. Engle.  
(7) "Some Uses of the Expenditure Function in Public Finance" with P. Diamond. and  
(8) "Necessary and Sufficient Conditions for the Classical Programming Problem".

**AWARDS:** Many, including the Clark Medal to most brilliant economist under 40.

**TALES:** In my prediction of who would win the Nobel prize, three of the ones that I mentioned for econometrics are co-authors with Dan in some seminal works as listed above, Jerry H., P. Diamond, and R. Engle. Life is like a box of chocolates, you never know what you're gonna get. There is a rumor among MIT grad students that while teaching micro at MIT in 1978, a student of Dan McFadden's named Hal Varian took very good notes. He then went on to become a professor himself and published a graduate text book in microeconomics based upon those notes.

It is still the most used graduate textbook for microeconomics. The lesson is to take good notes. :) I personally have benefited from McFadden's work.

I once wrote a paper that used McFadden's statistical techniques in order to measure what factors migrants cared about in moving from city to city. I did various cuts on the data which revealed new aspects of how different types of people decide whether to move to a city or not. This work could not have been done without the econometric theory developed by McFadden.

#### ON JAMES HECKMAN:

**CONTRIBUTION:** James Heckman, another fresh water economist. James Heckman used micro theory and applied to real world micro problems. He studied problems such as what do families do when there is a wage increase or a government subsidy. He did a lot of work on estimating "labor supply functions". In other words, how does labor supply change with the wage rate or how much more labor will be supplied for a given increase in the wage rate. Much of his analysis set the groundwork for the field. For instance, people use his style of analysis in public economics when they want to understand how a tax cut will affect the labor supply and in effect the economy. There are many problems with taking data and using to test certain hypothesis, since the data itself may have selection bias. Heckman has developed statistical methods of handling selective samples in an appropriate way. He has also proposed tools for solving closely related problems with individual differences unobserved by the researcher; such problems are common, e.g. when evaluating social programs or estimating how the duration of unemployment affects chances of getting a job. Heckman is also a leader of applied research in these areas.

**BACKGROUND:** BA (Colorado), MA (Princeton), and Ph.D. (Princeton). He has been a professor at Chicago for most of his career.

**PAPERS OF NOTE:** (1) "The Estimation of Income and Substitution Effects in a Model of Family Labor Supply"

(2) "Estimating Labor Supply Functions"

(3) "The Common Structure of Statistical Models of Truncation, Sample Selection, and Limited Dependent Variables"

(4) "Sample Selection Bias: A Specification Error"

(5) "The Identifiability of the Proportional Hazard Model"

**AWARDS:** Many, including the Clark Medal to most brilliant economist under 40.

**TALES:** None.

Sincerely,

Ludwig