Frederick V. Waugh

A Profile of Relevance

by Martin E. Abel

Frederick V. Waugh was a pioneering giant in his profession. He developed theory and measurement techniques that are now commonplace. He stressed the application of these methods. And he helped train several generations of economists who perpetuate his philosophy that economists should do relevant and useful work. That spirit is best expressed in Fred's own words: "New methods of economic research are useful if, and only if, they help us solve real problems."

He worked as an agricultural economist for over 50 years, and most of that time was spent in the U.S. Department of Agriculture (USDA).

His writings are legion. To delve more deeply into his works, look at the bibliography of his writings and key pieces reproduced in *Selected Writings on Agricultural Policy and Economic Analysis: Frederick V. Waugh,* edited by James P. Houck and Martin E. Abel and published by the University of Minnesota Press in 1984.

Fred Waugh had a never ending quest for relevance and an uncanny ability to be elegant but simple and to be practical but wise. He was a pioneer but modest. These characteristics are illustrated by three major themes and four characteristics that were central to his professional work.

Forecasting Prices

One of Fred's basic ideas was that being able to forecast prices would improve the functioning of markets and the welfare of market participants. His first known attempt to use statistical methods to forecast prices was a paper published by the New Jersey Department of Agriculture in 1923. It was entitled *Factors Influencing the Price of New Jersey Potatoes on the New York Market.* As always, he was right on the mark when he concluded this piece by saying:

> "All farmers and dealers are interested in probable future prices. If they knew how prices would change during the season they could make their policies of buying and selling fit the conditions. Thus, if they knew the price of potatoes would double during the season, farmers would dig and market their potatoes as late as possible to get the advantage of the rise in price. Dealers would fill all available storage space with potatoes. If they were sure that prices would drop farmers would dig their potatoes as soon as they were marketable, and dealers would handle only what they could sell from day to day to avoid the loss caused by the drop in prices."

His interest in price forecasting resulted in the now legendary program of commodity analysis in USDA during the 1950s and 1960s. Working with James P. Cavin, he recruited young economists to develop and apply newly emerging econometric techniques to agricultural commodity markets. The resulting studies of agricultural commodities established the groundwork for applied econometric work, not only in agricultural economics, but also in economics generally. Many of the researchers who worked with Fred became distingushed economists in government, universities, and industry. Throughout all this work runs the common theme of how to do a better job of price forecasting.

I end this discussion of forecasting with a reference to Fred's now famous piece on *The Place of Least Squares in Econometrics*, published in 1961. Fred, a founder of the Econometric Society, had become concerned that econometricians were becoming so "sophisticated" that their work was becoming irrelevant. He began that piece with the following words:

> "I am not recommending 'empirical' work, which my dictionary defines as 'depending upon experience or observation alone, without due regard to science and theory.' Economic facts without theory are of little value. But neither is theoretical speculation without facts. What we need is more work that is truly econometric, i.e., that combines mathematics, economic theory, and statistical measurements to explain how the economy operates and to give the basis for usable economic predictions."

The point of his article is that a simple statistical technique is a perfectly valid one for forecasting. One does not necessarily need more elaborate models. "Which is better: a simple mousetrap that is known to catch mice or an elaborate refined mousetrap that (so far, at least) has caught very few?" This pioneering article has stood the test of time!

Price Instability

Another theme of Waugh's work was price instability. In his now famous 1944 article *Does the Consumer Benefit from Price Instability?*, he demonstrated theoretically that consumers are better off with price instability than with stable prices. There was an explosion of economic work focused on this subject in the 1970s when commodity prices became highly unstable. Nearly all of these investigations were based upon Fred's original 1944 article.

While consumers benefit from price instability, Fred recognized that highly volatile prices did not necessarily benefit farmers and that government had an appropriate role to play in ensuring adequate supplies. In a 1967 piece for the National Advisory Commission on Food and Fiber, he analyzed the role of reserve stocks of farm products and how they could be managed. He went on to estimate what he thought were desirable reserve stocks for wheat, feed grains, rice, and cotton in the context of the late 1960s. This analysis established the intellectual basis for what later became the farmer-owned grain reserve.

Price Discrimination

Another theme that Fred developed was that price discrimination among markets would improve both producer and social welfare. If there are two or more distinct markets and the quantities purchased in these distinct markets respond differently to changes in prices, total returns to producers can be improved by charging different prices in these markets. This idea has had far-reaching implications. For example, it is now commonplace for marketing organizations and governments to charge different prices for fresh

Martin E. Abel is President of Abel, Daft, & Earley.

The preparation of this department is coordinated by John E. Lee, Administrator, ERS, USDA.

and processed products and to have one price for domestic markets and another price for the same product sold in export markets.

The idea of price discrimination is an important part of today's social policy. Fred developed the theoretical underpinnings of the food stamp and food distribution programs. He actively participated in bringing some of these programs into being in the late 1930s and again in the early 1960s. The idea is simple: Farmers' returns can be increased by providing food at reduced prices to poor people. With lower prices, the poor can afford to buy a more adequate amount of food and their health and welfare are improved.

There was no stronger supporter of food programs than Fred Waugh. Yet he was not, in the words of today, a "blazing liberal." He saw food programs as benefitting both farmers and poor people who needed help. In fact, he wrote an article back in 1940 entitled *Programs for Using Agricultural Surpluses to Reduce Malnutrition and to Benefit Farmers.* How many farmers today perceive food programs as benefitting them by expanding the demand for food?

Perseverance

Waugh's work on food programs also illustrates his perseverance in pushing ideas he thought were right. The original Food Stamp Program that began in the late 1930s ended with World War II, and public interest in the idea waned after the war. But Fred didn't give up.

Senator Aiken of Vermont was interested in the idea and was an ally. Fred once told me that he took a leave of absence without pay from USDA to help Senator Aiken develop his Food Allotment Program—or as Fred said "to get it right." Senator Aiken first introduced his Food Allotment Bill in Congress in 1944 and tried to get a bill passed in every session thereafter through the 1950s. His efforts (and Waugh's as well) finally came to life when President Kennedy issued his first executive order in January 1961 setting up the Pilot Food Stamp Program that was enacted into law later.

New Ideas

Another characteristic reflected in Fred Waugh's work is his alertness to new ideas and how to make them understood by one and all. This trait is no better illustrated than in his quick perception in 1951 that the new science of linear programming had many practical applications in agriculture. He showed how linear programming could be used to calculate a minimum cost dairy feed—a first! Subsequent work by Hutton and Allison at Pennsylvania State University and Fischer and Schruben at Kansas State University refined and extended Fred's original piece. Today, every modern feed mill has a linear program for calculating least cost feed rations. And, a person does not have to be an economist to use these programs to great advantage.

Teaching

Fred was a great teacher and was always concerned with developing teaching materials and working with young professionals. In addition to the commodity studies, he wrote or encouraged others to write a series of technical handbooks. Both the commodity studies and the handbooks were invaluable teaching materials used extensively within USDA and at universities.

For many years he was the focal person for weekly bag-lunch seminars in USDA's South Building. These were well attended by USDA economists—young and old alike. Everyone had an opportunity to present their research and their ideas. Fred's sage advice and the collegial atmosphere which he fostered benefitted all who participated.

Importance of History

Finally, Fred was a student of history, particularly as it applied to his economics craft. He understood that ideas do not fall out of the heavens. He recognized that wrestling with real problems of the day is the great source of new and innovative ideas. Fred constantly thrived to understand how thought evolved. Such understanding helped him avoid wasting time "rediscovering the wheel" or repeating errors of the past. But he also understood that "selling" new ideas was never easy. It required patience, perseverance, and humility—three personal characteristics Fred possessed in great abundance—as all who knew him realize and as all who study the evolution of his thoughts can come to understand.

Today's ideas stand on the shoulders of the intellectual giants who preceeded us. Fred Waugh was one of those giants.

A Memory

In my mind's eye I see him hurrying down a corridor in the sprawling South Agriculture Building, his frail figure tilted slightly forward, one arm bent to clutch a handful of papers, the back half of his head glistening with a shock of pure white hair; or, sitting in an office at lunchtime munching a sandwich, the humble prophet surrounded by his disciples, they also munching lunches from brown bags, all the while engaged in spirited but gentlemanly debate over topics that ranged from higher mathematics to how to write a simple clear sentence.

He was Fred Waugh—consummate gentleman, brilliant mind. His life style, like his writings; simple, clear and understated but powerful. His ideas: also powerful in their simplicity without oversimplifying or demeaning—a man who had unkind words for no one—a man who respected his colleagues and, in turn , was revered by them.

—John E. Lee, Jr.