

CHAPTER TWELVE

THE COWLES COMMISSION: THE EARLY YEARS

by Vibha Kapuria-Foreman

Editor's Note: Was econometrics, the use of mathematics to make the study of Economics more scientific, born and perfected at Colorado College during the 1930s? "The Modern program in Economics made its unlikely landfall in America during the 1930s, high on the slopes of the Rocky Mountains," wrote one scholar. He attributed this unlikely occurrence to Alfred Cowles 3rd, a stockbroker in Colorado Springs who wanted to find a scientific way of explaining the causes of the Stock Market Crash of 1929 and the Great Depression of the 1930s. The scholar noted:

"[Cowles] created an organization, the Cowles Commission, to encourage the new-style work as well. To manage it, he hired Charles Roos, a Cornell University professor who had grown frustrated as research director for the National Recovery Administration (NRA), and installed him at Colorado College.... And every summer for the next few years, the Cowles Commission brought leading mathematical economists from around the world to a summer institute at the College. So, the most visible expression of the formal modern style of Economics took root in the 1930s in the shadow of Pike's Peak."¹

Apparently the summer institutes at Colorado College were a highlight of the early days of the Cowles Commission. "The setting of Colorado Springs was conducive to a pleasant informality, both in the econometric and recreational aspects of the conferences. Because the group was small and lived in the college dormitories, people had the opportunity to become better acquainted professionally and personally.... There were

¹ David Warsh, *Knowledge and the Wealth of Nations: A Story of Economic Discovery* (New York, NY: W. W. Norton, 2006), 91, 93.

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hikes, drives, and picnics in the inspiring mountains of the Pike's Peak and Cripple Creek regions....”²

Founding the Cowles Commission and installing its leading members in the Economics Department at Colorado College was not the only contribution to the College by Alfred Cowles 3rd. He served on the Board of Trustees from the late 1920s into the 1930s. If his own business affairs had not convinced him of the severity of the Great Depression, his work at the College certainly did. It was Cowles who announced at a special faculty meeting on March 10, 1933, that the College had dipped more than \$200,000 into the endowment in order to meet college expenses during the severe economic downturn. In order to save money, Ticknor and McGregor Halls were to be closed, the dining service in Cossitt Hall halted, and faculty salaries cut by 20 percent across the board.³

Born in 1891, Alfred Cowles 3rd was the grandson of the founder of the Chicago Tribune newspaper. He graduated from Yale University in 1913. In 1939, when his father died, Cowles had to move from Colorado Springs to Chicago to look after the family’s various business interests in the Windy City. He took the Cowles Commission with him, and it became a part of the University of Chicago.

The Cowles Commission was continuing its work in 2012 as the Cowles Foundation for Research in Economics at Yale University in New Haven, Connecticut.

The following article is on the work of the Cowles Commission while at Colorado College. It is part of a larger study on the history and significance of the Commission written by Vibha Kapuria-Foreman, Professor of Economics at Colorado College.

The Cowles Commission for Research in Economics described itself this way:

² Carl Christ, “History of the Cowles Commission, 1932-1952,” from *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952* (Baltimore, MD: Waverly Press, 1952).

³ J. Juan Reid, *Colorado College: The First Century, 1874-1974* (Colorado Springs, CO: Colorado College, 1979), 127-128. Also see Charlie Brown Hershey, *Colorado College, 1874-1949* (Colorado Springs, CO: Colorado College, 1952), 108.

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“With the sole purpose of applying the science of *econometrics* to current economic problems, there has now been instituted the Cowles Commission for Research in Economics, of Colorado Springs, Colorado.”⁴

The Cowles Commission was established to undertake econometric research – the application of quantitative and mathematical techniques to investigate economic relationships. Ragnar Frisch, who is credited with having coined the term *econometrics*, quoted from the constitution of the Econometric Society that its object was “to promote studies that aim at the unification of the theoretical-quantitative and the empirical-quantitative approach to economic problems,” an approach “similar to that which has come to dominate in the natural sciences.”⁵

The 1933 *Colorado College Catalog* gave this summary of the newly founded organization:

“The Cowles Commission for Research in Economics was founded in 1932 with headquarters in Colorado Springs. The Commission is a not-for-profit corporation and maintains a statistical laboratory in which are conducted investigations into problems of current economic interest with particular reference to the application of mathematics and statistics in the solution of these problems.”⁶

Much significant pioneering work in *econometrics* was carried out by the Cowles Commission during the early days of its history at Colorado College in Colorado Springs.

⁴ *Cowles Commission for Research in Economics, 1932, 7.*

⁵ Ragnar Frisch, “Editor’s Note,” *Econometrica*, Vol. 1, 1933, 1.

⁶ *Colorado College Catalog – 1933* (Colorado Springs, CO: Colorado College, 1933), 116.



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(Photograph from the Economics Department, Colorado College.)*

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THE FOUNDING OF THE COWLES COMMISSION

Alfred Cowles 3rd, the president of Cowles and Company and a member of a wealthy publishing family, ran an investment service from Colorado Springs. Disappointed with the widespread failure of stock market forecasts after the crash of 1929 (most of which were unduly optimistic), Cowles discontinued his own forecasting service and resolved to learn more about the forces determining business and stock market fluctuations.⁷

Cowles began by assessing the efficacy of rival stock market forecasts. He examined the effectiveness of the nation's 20 largest fire insurance companies along with 16 highly renowned financial services at selecting individual stocks whose prices would outperform the average issue. Employing probability analysis, he attempted to determine whether the best record was achieved through skill or chance and concluded that it could not definitely be attributed to skill.

He also evaluated the stock market advice of 24 financial publications from January 1928 to June 1932. In order to compare these results with those generated randomly, Cowles needed to know the true number of independent items in the time series of the forecasting records. Assuming an average number of forecast revisions per year, he calculated correlation coefficients for the best two and the worst two forecasters. Although concerned that he had not been able to calculate a sufficient number of correlation coefficients to completely determine the distribution of the forecasts, Cowles found that the best forecaster was only slightly better, and the worst much worse, than pure chance would provide.⁸

In the summer of 1931, Cowles discussed his efforts with Charles H. Boissevain, director of the research laboratory of the Colorado Foundation for Research in Tuberculosis. Boissevain suggested that multiple correlation analysis might help Cowles solve the problems of stock market forecasting and recommended that he contact Harold T. Davis, Professor of Mathematics at Indiana University. Cowles asked Davis "...if it was possible to compute the multiple correlation coefficient in a problem involving twenty-four variables."

⁷ Carl Christ, *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952* (Baltimore, MD: Waverly Press, 1952), 6-7.

⁸ Cowles, Alfred, "Can Stock Market Forecasts Forecast?" *Econometrica*. Vol. 1, 1933, 309-324.

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Davis suggested the use of Hollerith (IBM) punch card computing machines and, upon understanding Cowles's interest, suggested he associate himself with the Econometric Society and perhaps even finance the publication of a journal devoted to such issues.⁹

Alfred Cowles wrote to Irving Fisher, President of the Econometric Society, and offered an annual budget of \$12,000 per year to fund a research institution devoted to econometrics. Upon consultation with its membership and after many meetings between Cowles and members of the Econometric Society, the Council of the Society agreed.

“The agreement was as follows: Cowles would set up a research organization in Colorado Springs to be known as the Cowles Commission for Research in Economics; the Econometric Society would sponsor the Cowles Commission; the Cowles Commission would be guided by an Advisory Council appointed by and from the Econometric Society; and Cowles would underwrite the cost of publishing a journal for the society.”¹⁰

COLORADO SPRINGS: 1932-1939

Alfred Cowles became the first director of the Cowles Commission. The original staff included Harold T. Davis, William F. C. Nelson, Forrest Danson, and Anne M. Lescisin. The Advisory Council consisted of Ragnar Frisch (University of Oslo), Irving Fisher (Yale University), A. L. Bowley (London School of Economics), Wesley Clair Mitchell (National Bureau of Economic Research), and Carl Snyder (Federal Reserve Bank of New York).

Frisch also acted as a research consultant to the Commission and as editor-in-chief of *Econometrica*, the title adopted for the fledgling publication. The first issue appeared in January 1933. Davis was one of its three associate editors, Nelson was an assistant editor, and Cowles himself was its circulation manager.

⁹ Editor's Note: Harold T. Davis was Colorado College Class of 1915. He received an honorary degree from the College on May 6, 1949, the 75th anniversary of the holding of the first classes at Colorado College.

¹⁰ Carl Christ, *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952*, 10.

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ALFRED COWLES 3d



SEAL OF THE COWLES COMMISSION

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Cowles also served as the Treasurer of the Econometric Society. Nelson taught courses on economic statistics and contemporary economics at Colorado College and plans were under consideration whereby the College would provide facilities for the Commission's statistical laboratory.¹¹

During its first two years, the Commission's focus was Cowles's interest in the analysis of the stock market. Alfred Cowles's research involved the construction of stock indices, a study eventually published in 1938 as Commission Monograph No. 3, "Common Stock Indexes, 1871-1937." Nelson also worked on stock market indices, while Davis focused on time-series analysis, presenting papers on "The Perturbation Problem of Economic Series", "The Harmonic Interaction of Economic Series", and "Some Statistical Aspects of Random Series."

Meanwhile, Cowles collaborated with Edward N. Chapman, a researcher at the Colorado Foundation for Research in Tuberculosis, on a statistical study of the effects of climate on pulmonary tuberculosis.¹²

In September 1934, Charles F. Roos became the first director of research at the Cowles Commission. He had been research director at the National Recovery Administration and had requested a letter of reference from Cowles. Cowles responded by offering him a position as research director at the Cowles Commission, and Colorado College offered him a professorship in Econometrics. Roos accepted both positions.¹³

Under Roos's leadership, the Cowles staff continued to pursue diverse interests. Two traditions were begun: the publication of Cowles Commission Monographs and the institution of research conferences on economics and statistics at Colorado College. These annual conferences lasted almost the entire month of July and were attended by economists and statisticians from the US and abroad.¹⁴

¹¹ *Colorado College Catalog - 1933*, 116-7.

¹² *Colorado College Catalog - 1933*, also catalogs for 1934 and 1935.

¹³ Carl Christ, *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952*, 13-14.

¹⁴ Attendees included R. G. D. Allen, Irving Fisher, R. A. Fisher, Ragnar Frisch, Corrado Gini, Harold Hotelling, Jacob Marschak, Karl Menger, Elmer J. Working, Holbrook Working, and Theodore O. Yntema. See Cowles Commission for Research in Economics, "Report for the period from 1932-1937," 10.

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Although general economic issues dominated, a significant number of papers presented at these conferences dealt with econometrics, statistics, and probability theory. Thus, tests of significance, problems of estimation and curve fitting, correlation analysis, analysis of variance, probability theory, and the properties of means were some of the topics under discussion. Even the general economics papers had significant mathematical content and focused on the construction and elaboration of mathematical models of economic relationships.¹⁵

Herbert E. Jones joined the staff of the Cowles Commission during 1935 and was awarded a fellowship in 1936. His work focused on stock indices and time-series analysis. The following year brought Dickson H. Leavens, Gerhard Tintner, and Edward Chapman on board. Leavens concentrated on the analysis of silver money while Chapman continued his tuberculosis research. Tintner was a fellow of the Commission and wrote papers on income distribution, monopoly and duopoly theory, and the statistical theory of errors.¹⁶

Roos resigned as research director in January 1937. Davis took over as acting director but left before the end of the year. Attempts to recruit a full time director failed, in large part because of the remoteness of Colorado Springs from major research institutions.¹⁷

Over the next two years the Commission operated without a director of research. The summer conferences continued, and the 1938 conference celebrated the centenary of Cournot's *Récherches*.

Abraham Wald and Horst Mendershausen became Cowles Commission fellows that year. Wald worked on indifference surfaces and statistical estimation. Mendershausen worked on production functions, the definition of equal-well-being in Frisch's double expenditure method, and confluence analysis.¹⁸

¹⁵ "Reports of the Annual Research Conferences on Economics and Statistics," held at Colorado Springs, 1936 to 1940, Cowles Commission for Research in Economics, Colorado College and the University of Chicago, 1936-1940.

¹⁶ *Colorado College Catalog – 1937*, 113.

¹⁷ Carl Christ, *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952*, 18.

¹⁸ *Colorado College Catalog – 1939*, 120.

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DEPARTURE FROM COLORADO SPRINGS: 1939

In September 1939, the Cowles Commission became affiliated with the University of Chicago. Gerard Debreu attributes the move to the difficulty of attracting a new research director.¹⁹ Christ reports that the move was precipitated by the death of Cowles's father. Alfred Cowles now found making his headquarters in Chicago a business necessity.²⁰ The move has also been ascribed to a change in the tax laws in Colorado.²¹

In any event, the Commission relocated, and the offices of the Econometric Society followed.

COWLES COMMISSION STAFF, FELLOWS, AND GUESTS, 1932-1939

Edward N. Chapman (1936-1941)
Forrest Danson (1932-1943)
Harold T. Davis (1932-1937)
Herbert E. Jones (1936-1937)
William F. C. Nelson (1932-1936)
Charles F. Roos (1934-1937)
Gerhard Tintner (1936-1937)
Abraham Wald (1938)

¹⁹ Gerard Debreu, "Mathematical Economics at Cowles," *Cowles Fiftieth Anniversary* (New Haven, CT: Yale University Printing Service, 1991), 27.

²⁰ Carl Christ, *Economic Theory and Measurement: A Twenty Year Research Report, 1932-1952*, 20.

²¹ Roy Epstein, *A History of Econometrics* (New York, NY: North Holland, 1987), 61.