

NATIONAL BUREAU
report



NATIONAL BUREAU OF ECONOMIC RESEARCH, INC. NEW YORK, N. Y. 10016

THE HUMAN RESOURCES COLLOQUIUM

The last session of the National Bureau's Fiftieth Anniversary Colloquium Series was devoted to a discussion of research under way and priorities for future investigations in the field of human capital. Since the anniversary colloquium series was designed to explore those aspects of economic research where the Bureau had made substantial contributions during its first half century, the selection of this topic for discussion may appear somewhat surprising. However, although it is but a little over a decade since the human capital concept has become recognized as a legitimate economic approach, the Bureau, largely through the association of Gary Becker and Jacob Mincer, has been at the center of developments in this field.

At the luncheon session of the Human Resources Colloquium, Wilbur J. Cohen, dean of the School of Education at the University of Michigan and former Secretary of the Department of Health, Education and Welfare, presented an address entitled "The Quality of Life and Social Indicators." His presentation, which touched upon a number of the socioeconomic problems plaguing policy makers, is reproduced as the Supplement to this issue of the *National Bureau Report*.

"The Quality of
Life and Social
Indicators"

THE CONCEPT OF HUMAN CAPITAL

Why did human capital theory not take hold until the late 1950's and early 1960's? In his "Human Capital: Policy Issues and Research Opportunities" (soon to be published as part of the Bureau's Fiftieth Anniversary

Genesis

series), prepared for the Human Resources Colloquium, Theodore W. Schultz of The University of Chicago points out that the prerequisite of the human capital concept is an all-inclusive concept of capital in general. According to Schultz, Irving Fisher had already presented such a concept at the beginning of this century, "starting with his paper 'What is Capital?' in 1896, elaborating on it in subsequent papers, and then completing the task in a classic book [*The Nature of Capital and Income*] published in 1906. . . . But Fisher's approach to capital, which extended the traditional marketplace concept of capital to include human capital, was not accepted by the mainstream of economists . . . human capital was not at home in the original house that economists built." Harvard University's Samuel Bowles sums up the reasons for the neglect of the human capital approach in a comment which Schultz notes in his paper, ". . . The absence of any systematic treatment of human capital in either the classical or the Marxist scheme results from the fact that both Marx and the classical writers defined their factors of production in terms of the way they perceived the class structure of the period. The absence of any notion of human capital is . . . a result of a conscious attempt to portray the class structure as they saw it, coupled with the fact that the role of education and skills in the economy was considerably less than today. . . ." Thus, it was not until the Universities-National Bureau Committee for Economic Research held an Exploratory Conference on Capital Investment in Human Beings, in December 1961, that the economics profession formally added human capital theory to its tool chest.

APPLYING THE HUMAN CAPITAL APPROACH

Over the past ten years, the human capital approach has been employed in almost all established areas of economic research, permitting economists to explore some aspects of human behavior once considered beyond their domain. The relationships between educational attainment, income, and human behavior in general have thus far probably absorbed the greatest share of the National Bureau's human capital research resources.

*Education
Income, and
Human Behavior*

Education begins at birth, is formalized during the schooling process, and continues through at least part of the working lifetime. Its impact on almost every facet of an individual's economic, social, and political life is being explored by Bureau economists. To determine the net value of the educational experience, the inputs (innate ability, family background, schooling characteristics, on-the-job training programs, etcetera) and the outputs (income, social and political motivations and behavior characteristics, etcetera) of each of the components of the educational process must be examined. The data generated are, by their very nature, highly complex and their analysis depends upon the separation of frequently subjective and interacting elements. A vast array of microdata sets has resulted. Econometrics and a broad spectrum of computer techniques have been employed in their interpretation.

The Carnegie Commission on the Future of Higher Education will soon publish a collection of essays containing the results of some of the recently completed Bureau education and human capital investigations in a volume

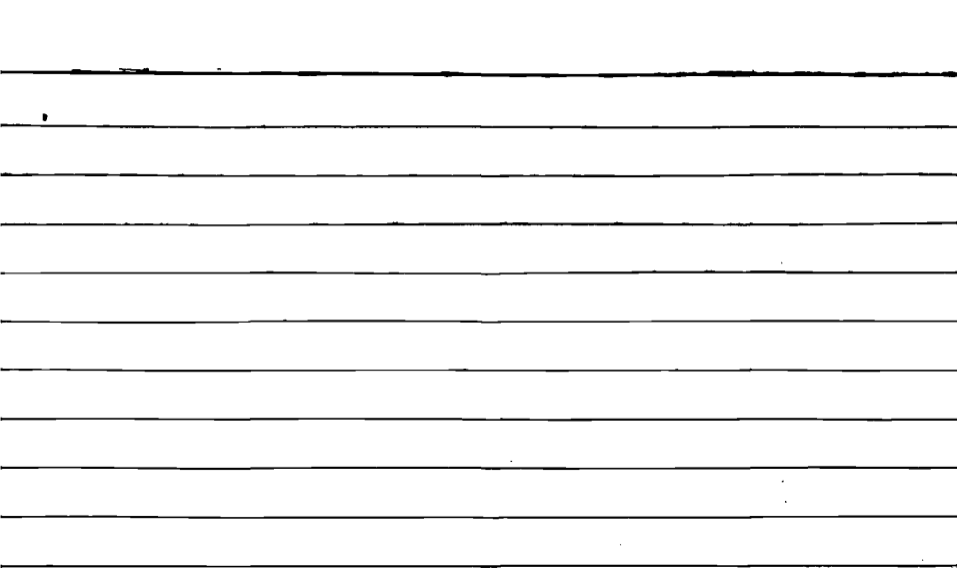
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entitled *Education, Income, and Human Behavior*. F. Thomas Juster, the Bureau's Research Vice President who directs these projects, has edited the volume and prepared a summary which brings into focus much of the Bureau's work in this area. An overview of the studies to appear in *Education, Income, and Human Behavior* and others within NBER's human capital and education program is presented below. The work has been or is being conducted with the assistance of grants from the Carnegie Commission on the Future of Higher Education, the National Research Council's Office of Education, the National Science Foundation, and the Economic Development Administration of the Department of Commerce.

Ability, Education, and Earnings

The first essays in *Education, Income, and Human Behavior* represent attempts to refine the nature of income-schooling relationships. Variables such as ability, family background, sex, and religious preference are filtered out from the observed returns to educational differences to achieve a genuinely net or "value added" measure of returns to formal schooling. In "Mental Ability and Educational Attainment," Paul Taubman and Terence Wales concentrate on the interaction between ability and schooling. They provide evidence indicating that despite a continued rise in the proportion of students entering college, the average ability of college students has not fallen. Colleges have become increasingly proficient at identifying, or at least admitting, more able students. At the same time, however, the average ability of high school graduates who do not enter college appears to have declined.

Can educational attainment of itself be shown to provide returns in the form of earnings if proper allowance is made for intelligence, innate abilities, and other noneducational influences? Taubman and Wales respond with a qualified yes in "Education as an Investment and Screening Device." Their work centers on an analysis of the pure role of formal schooling—as distinct from the combined role of schooling and other variables like mental ability—in the generation of income differentials. They find that omitting ability variables from the analysis of returns to educational attainment results in only slight overestimation of schooling's impact on earnings, with the caveat that the influence of pure schooling (especially postgraduate training) is greater for those in the upper end of the ability distribution. Among the possible reasons underlying these results, Taubman and Wales speculate that since most employers use diplomas as criteria (or screening devices) for employment, rather than more expensive and time-consuming independent determinations of ability, the employee possessing a diploma has a decided edge in locating and assuming available positions.

In "Ability and Schooling as Determinants of Lifetime Earnings," John Hause further qualifies the Taubman and Wales findings. Hause also examines the relationships between ability, educational attainment, and earnings; however, he attributes only a proportional effect to ability's influence on earnings by creating an interaction specification in which the effects of ability depend on the level of formal schooling attained. He finds that ability and schooling interact proportionately to produce significantly higher in-

The ABC's and
the SAT's

Educational
Attainment and
Expected
Earnings

comes than would be predicted by a simple mathematical combination of the two. Hause's work empirically substantiates the widely held opinion that the rate of return to education is influenced by the level of basic ability, and that the returns to those with one or more college degrees increase with their level of ability.

Will Johnny
Make Harvard?

Apart from individual ability differences which can affect a student's educational attainment and subsequently his future earnings capacity, the quality of the educational institutions which he attends will also influence his lifetime income. To a large extent the quality and implicit value of an educational institution is influenced by the environment within which it dispenses knowledge. In a study recently undertaken, Finis Welch of the National Bureau's staff is attempting to determine what makes schooled people more productive. He is examining the relationship between schooling value and such factors as skill distribution, the availability of "on-site" training equipment, and the use made of other teaching aids within the educational system. At the same time, Lewis Solmon and Paul Wachtel are attempting to identify those characteristics of secondary schooling quality (i.e., faculty salaries, faculty-to-student ratios, standardized test score results, etcetera) that influence university admission and attendance. Simultaneously, they are analyzing similar aspects of university quality to determine how they influence earnings. Ultimately, they hope to determine if graduates from certain colleges—say, the Ivy League schools—are presented with greater opportunities in the job market, both initially and later in life, than graduates from less prestigious institutions.

Beyond Formal Schooling

Education in the
Marketplace

How does the accumulation of educational capital change over one's lifetime? This question is explored by Sherwin Rosen in his essay "Knowledge, Obsolescence, and Income" (also included in *Education, Income, and Human Behavior*). Rosen presents a model in which the individual augments his educational capital by knowledge obtained in the labor market and depreciates it by personal obsolescence—physical wear and tear. He finds that in the early years, individuals tend to accept jobs that offer relatively large learning opportunities, while switching to jobs with relatively small or no learning opportunities in their later working years. These choices imply that following the completion of formal schooling, an individual continues to invest in his stock of knowledge for some years, but that at some point his investments stop and he begins to make withdrawals from the account until, toward retirement, his educational capital is all but depleted.

"Education, Experience, and the Distribution of Earnings and Employment" by Jacob Mincer also utilizes the conceptual framework of educational capital accumulating through part of the working lifetime. It was Mincer, in fact, who first recognized that formal schooling was not the only contributing factor to one's educational capital but that additional capital also accrued from such experiences as on-the-job training. Emphasizing this aspect of the relationship between human capital and lifetime earnings in his study (which will also appear in *Education, Income, and Human Be-*

havior), he examines the impact of education and other human capital differences on the distribution of individual and family earnings by cross-sectional structure of earnings differentials and by changes in the structure over time. He finds, for example, that over 70 per cent of normal or long-run income inequality can be attributed to differences in human capital stocks. Mincer also finds that more highly educated males begin work at a later chronological age, but remain in the labor force longer. Thus, the time spent in school before the start of working life is roughly offset by additional time spent in the labor force at the close of working life. For women, labor force participation rates are systematically higher the greater the levels of formal schooling attained, except for the fact that participation rates are about the same for women with preschool or school-age children.

The decline in work force participation for college-educated women during child-rearing years suggests that an important part of their total earnings from higher education is represented by the sizable investment they appear to make in their children. Analysis of the preschool investments which parents make in children is the subject of another NBER study recently undertaken.

Education in the Home

Gary Becker, Jacob Mincer and Barry Chiswick have been at the forefront of much of the Bureau's research effort devoted to analyzing the effects of human capital resources—particularly those which accrue outside the formal educational process—on the personal distribution of income. In a forthcoming NBER publication, tentatively entitled *Human Capital and the Personal Distribution of Income*, Becker has devised an operational definition to distinguish between the effects of investments in schooling and the other factors which govern income differentials. Mincer further expands his analysis of income distribution between and within groups of workers defined by schooling and age. He explores the selection of a function which relates earnings to schooling and age, and he examines the possibilities of estimating separate costs and rates of return to schooling and postschooling investments. He also attempts to discriminate between "random shock" and human capital models of income inequality. Among other things, his findings underscore the importance of distinguishing between age and experience as determinants of earnings. He also presents estimates of the quantitative importance of investment in human capital as a determinant of total income inequality. Chiswick builds on Mincer's work, using the approach and developing the methodology to explain differences in income distribution interregionally and internationally.

Education's Impact on Behavior

The human capital approach permits economists to translate concepts once considered purely qualitative into quantitative terms. Thus, in evaluating the impact of various levels of educational attainment, an extensive array of socioeconomic and sociopolitical variables can be analyzed. Much has been said about the effects of education in transforming attitudes, values, and behavior in ways that are thought to represent significant improvements attributable to schooling. Little solid empirical analysis, however, has ac-

accompanied these judgments. The studies discussed below, all of which will appear in *Education, Income, and Human Behavior*, constitute an important start toward replacing casual impressions of nonmonetary benefits of education with solidly grounded empirical findings.

Education and
Attitudes

In "Educational Attainment and Sociopolitical Attitudes," Albert Beaton examines the relationships between years of schooling and such factors as parental education and occupation, perceived attitudes about the effectiveness of various aspects of formal schooling, occupational and earnings satisfaction, voting behavior, and general sociopolitical attitudes. Along with many other interesting findings, Beaton's analysis provides evidence that the more able obtain more education, that there is a slight tendency for the more educated to be closer to the middle of the road in their political views, and that those in the highest aptitude groups, while rating themselves political conservatives, in fact hold somewhat lenient views with respect to racial integration and the freedoms that should be afforded the younger generation.

Was Jesse James
a Dropout?

Education also appears to play a role in determining an individual's propensity to develop antisocial behavior characteristics. In his essay "On the Relation Between Education and Crime" Isaac Ehrlich develops a model to explain individual participation in illegal activities. He postulates that the motivations that underlie decisions to engage in crime are similar to those underlying decisions to engage in legal enterprises; but, while the payoffs from normal economic activity are simply the expected values of earnings derived from work, the payoffs from illegal activity consist of the expected rewards—the loot—modified by the possibility of being caught and convicted. According to Ehrlich's hypothesis, higher education, which always has some return in legal activities, alternatively reduces an individual's incentive to engage in illegal activities. Race and age perforce play a distinct role in the relationship. Since the rate of returns to formal schooling has been found to be much less for nonwhite males than for white males, it follows that nonwhite males tend to exhibit a higher level of participation in illegal activities than white males. Ehrlich goes on to analyze the effectiveness of law enforcement in various communities whose populations reflect varying levels of educational attainment. He finds that communities with higher educational levels have significantly more effective law enforcement agencies.

Education and
Fertility

Given the current concern over ecological balances, some might say that parents who have more than two children are engaging in illegal activity. (Many of the ecologists' fears, though, have been challenged by James Tobin and William Nordhaus in their paper "Is Growth Obsolete?" This paper, prepared for the Bureau's Fiftieth Anniversary Colloquium on Economic Growth, will be published as part of the Anniversary series of publications.) The influence of schooling on family size is examined by Robert Michael in "Education and Fertility." Michael contends that children provide a flow of services to parents that varies directly with their number and quality. Parental desire for children is derived from the demand for child services coupled with the demand for sexual activity. The contraceptive costs of spacing or preventing births is considered the primary factor offsetting the returns to be realized from satisfying these desires. Michael finds that when family income, the husband's wage rate, and other demographic characteristics

of the family are standardized, people who have attained higher educational levels tend to have fewer children. This result appears to operate through the timing of the first child, who comes along later in the lifetime of those with more formal schooling. There also appears to be more uniformity in spacing among the children of relatively highly educated parents, with the ages of their children clustered together more closely.

The final three essays in *Education, Income, and Human Behavior* focus on the relationships between education and consumption or savings behavior. Robert Michael examines the role of formal schooling in affecting the pattern and efficiency of an individual's savings decisions in "Education and Consumption: A Summary." He proposes the hypothesis that education influences the efficiency with which households combine various inputs to produce desired outputs. He anticipates that, other things being equal, households with more education should be able to get more outputs out of a given quantity of inputs. Michael's evidence supports his hypothesis. The better educated are able to locate and utilize resources more efficiently than their less educated counterparts. Moreover, he suggests that the size of the consumption efficiency return is far from negligible and may represent one of the most important economic byproducts to be realized from investments in formal schooling.

The essay by Gilbert Ghez "Life-Cycle Consumption and the Price of Time" is also concerned with the impact of educational differences on consumption behavior, but Ghez focuses on the lifetime profile of consumption rather than its structure or the efficiency with which households make consumption decisions. His data indicate that differences in levels of educational attainment are positively associated with differences in consumption patterns. But, among families with different educational backgrounds and the same current earnings, there is only a negligible difference in the response of consumption patterns to changes in earnings or family structure. While the better educated tend to consume slightly more over their lifetime, Ghez indicates that this may result from their higher level of certainty about their future income.

Lewis Solmon's essay "The Relationship Between Schooling and Savings Behavior" parallels Ghez's work in documenting the proposition that those with higher educational levels save more than others. Although many factors influence his argument, the most important appears to be that those with more schooling are more apt to be independently employed (i.e., professionals or proprietors), and that their earnings over a lifetime will vary more than earnings in the form of wages and salaries.

FORMER BUREAU RESEARCHER WINS NOBEL PRIZE

The award of the Nobel Prize in Economic Science to Simon Kuznets was a source of particular pride to all at the National Bureau. His role in the Bureau's development and his outstanding contributions to its research program had long ago convinced his Bureau colleagues of the distinguished place he occupies within the profession.

Simon Kuznets
and the NBER

Last April, Professor Kuznets presented the principal discussion paper at NBER's Fiftieth Anniversary Conference on the Future of Economic Research (his paper "Quantitative Economic Research: Trends and Problems" will be published as part of the Fiftieth Anniversary publications series to be issued during 1972). At dinner following the session, many of those who worked closely with him at the Bureau toasted his numerous accomplishments. Willard L. Thorp, the American Economic Association's representative to the National Bureau's Board of Directors and the Board's senior member, commented on Simon Kuznets' early career at the Bureau. While he has received a substantial amount of press coverage recently, there remain a few details of his life that are known only to those, such as Willard Thorp, who knew him during those early years. Professor Thorp's remarks, reproduced in part below, intertwine the development of both the Bureau and Simon Kuznets, and reflect some of the personal insights which may lend perspective to the life of the man who has received one of the world's highest distinctions.

Since Simon Kuznets spent the afternoon looking at the future of economics, it seems appropriate that we turn the tables and as economists spend a few moments looking at the past of Simon Kuznets. The pre-Kuznets era of the National Bureau was very short. A very small staff worked in an ancient residential house in the Chelsea district of New York City—Twenty-fourth Street between Ninth and Tenth Avenues. The only more or less respectable neighbor was the struggling New School for Social Research on Twenty-third Street. They were virtually back to back. There was a close connection—Leo Wolman and Fred Macauley taught courses in the New School, and Wesley Mitchell was its treasurer. At the time, the New School's respectability was a bit suspect, since Watson attracted large audiences with his lectures on behaviorism using slides depicting different physical characteristics of women. (Had these slides moved, they might have qualified for some of today's motion pictures!)

While the Bureau's tiny staff was concerned chiefly with national income, Wesley Mitchell, co-director with Dean Edwin Gay, began fresh work on business cycles. He took young graduates to be his assistants—I was the earliest and Simon was next. Simon's name first appeared in a National Bureau publication in 1927 in Mitchell's *Business Cycles: The Problem and Its Setting*. Not only was he listed in the staff, but in Mitchell's preface he specifically named Kuznets as one of the small group which had put its technical skill freely at his disposal.

Mitchell's assistants received little direction. . . . But, in each case, he spun us off after a time to write a Bureau publication—mine was *Business Annals* and Simon's related to *Seasonal Variations in Industry and Trade*, a 479-page book which sold at retail for \$4.00. Incidentally, this completed a trilogy, since Simon had already dealt with cyclical fluctuations and secular movements in earlier studies. At about the

same time, Simon became more and more active in the field of national income, and a youngster named Arthur Burns joined the business cycle staff. To round out the picture, I must add that a very important person at the Bureau was Edith Handler. She helped us all, doing so much in connection with Harry Jerome's *Migration and Business Cycles* that her work was recognized not in the preface but on the title page. Simon recognized her unusual qualities and, in 1929, she consented to become exclusively his helpmate, and she still is.

The Bureau has never had another staff member with Simon's productivity. He produced books more rapidly than the business cycle produced peaks. At least ten appeared in the twenty-eight years between 1933 and 1961, not to mention three Bulletins and five Occasional Papers. As to the series on income and wealth, which now includes some thirty-five volumes, I can credit them only partially to Simon's account since they have multiple authorship. However, not only was he a prime mover, but he appears conspicuously in volumes 1, 2, 3, 10, 12, 14, 15—and then I became bored with the project.

Although our purpose here is to celebrate the tremendous contributions by Simon to the growth and development of the National Bureau, it would be narrow-minded to fail to note that he has spoken as well as written, even though usually softly. He was on the faculty of the University of Pennsylvania from 1930-54, Johns Hopkins from 1954-60, and Harvard ever since. I have never checked with him but I suspect that he received like advice from Wesley Mitchell as mine—that I should accept a professorship in Amherst because a college or university provided the most secure subsidy for carrying on a profitless life of research. He arranged for both of us to continue our connection with the Bureau as nonresidential members, and Simon at least followed Mitchell's advice ever after.

Simon's work is a beautiful demonstration of macro-economics at its best. To be sure, he wrote one technical book on the seasonal analysis of time series, and he and Milton Friedman made a micro-market analysis of incomes from independent professional practice, but his chief focus has been on national income and its composition. In 1946, he carried his estimates back to 1869. With the passage of time, one now could write a non-best seller by exploiting Simon's work and making a thing of the hundred-years' record. Simon's work has dealt particularly with capital formation. More recently, he has expanded his interest from the provincial American economy to a world base. His work in the sixties concerning the poverty of nations and how they grew, or didn't has been one of the brightest lights shining in an area where economics has proved to be most underdeveloped. Simon's mind starts with curiosity, proceeds with the exhausting search for information, and then strains the results through a critical filter. Curiosity, painstaking search, and skepticism—what more can one ask of an intellect?

Since this issue of the *National Bureau Report* has focused on the work which the Bureau is doing in the area of human capital research, one aspect of Kuznet's notable work on national income deserves special consideration here. As Moses Abramovitz, a Bureau Director appointed by Stanford University, points out in an article published in the October 29, 1971 issue of *Science Magazine*, "Kuznets paid scrupulous attention to the conceptual formulations of the estimates of national income. He insisted on the social judgments needed to separate economic activity from the rest of life and productive from nonproductive activities. He dealt openly with the desired reach of the estimates from marketed production to activities outside the scope of

markets, with the consistent treatment of intermediate goods, and with the tangled problems of valuing varied outputs at a given time and of correcting for price changes over time. Kuznets stressed the relativity of his or any answers to the social values of time and place, to the nature of family, industrial, and governmental organization, and to the problems to which the figures are designed to apply.”

Kuznets’s research continues to flourish. It may yet surpass that which afforded him the Nobel Prize.

PROFILES

The Board of Directors of the National Bureau of Economic Research is charged with the responsibility of ensuring that the work of the National Bureau presents to the public important economic facts and their interpretation in a scientific and impartial manner. Academic and business economists and representatives from industry, labor, banking, accounting, finance, and statistics—holding divergent economic, social and political views—serve in the nonsalaried directors’ positions. They authorize all Bureau research, and must read, comment upon, and approve all manuscripts before publication. The time and effort which each board member contributes to the Bureau are significant. These men, whose decisions help to shape the course of economic research yet who serve so quietly, will be profiled in this and subsequent issues of the *National Bureau Report*.



Theodore O. Yntema,

after serving his two-year term, relinquished the chairmanship of the Board of Directors at the September annual board meeting. On this occasion, the Bureau’s president, John R. Meyer, traced Professor Yntema’s long and distinguished association with the Bureau and recounted some of his many contributions to its work. Excerpts from President Meyer’s address follow:

... Ted’s been a Board member for thirty years now. He was first appointed by The University of Chicago in 1941. In 1949, when he left Chicago to become a member of the Ford team as vice president of finance (Ford had better ideas even at that time!), he had to resign his Board appointment. Rather than lose his valuable counsel, however, the Bureau, much to its credit, acted quickly—and in violation of its long-standing tradition of always being deliberate in all matters. Within two months, almost surely a record for haste at the Bureau in any undertaking, Ted was appointed a director at large. In 1963, during the time that he was chairing CED’s Research and Policy Committee, and by virtue of that fact, his status on the Board changed again and he became CED’s appointed representative. Two years later, he became

vice president of the Board—a title subsequently changed to vice chairman. In April of 1968, Ted once again became a director at large, and about five months later, at the forty-eighth annual board meeting, Ted became Chairman, succeeding Arthur Burns.

... Ted is a particularly modest man, but if pressed to list his achievements, I think he might mention at least one at the Bureau. While serving as research director for the CED during the early 1940's Ted realized that to achieve an integrated picture of the economy, economists would need to study the functioning of the monetary and credit system in conjunction with the full range of economic developments. Thus, it was at his urging that the CED asked the Bureau to undertake this task and the resultant flow of funds research program, originally conducted at the Bureau by Morris Copeland, was begun and forms the basis of the Fed's calculations to this day. It is perhaps symptomatic of how very often Ted's thoughts are ahead of their time that these flow of funds accounts are only now beginning to attract the real attention of economic theorists and policy makers. . . .

This is perhaps *the* single Bureau accomplishment that Ted would list—if one could get him to undertake any such listing in the first place. My list would need to be a good deal longer. But the hour is getting on, so let it suffice for me to say that although I had met Ted occasionally before assuming the presidency of the Bureau, I first really came to know him three years ago. . . . Since then, I have grown to admire and respect him in all sorts of roles—as a thinker, a doer, a mediator, a conciliator, and most importantly, as a trusted and sincere friend. . . .

Professor Yntema, a member of the Economics faculty at Oakland University, Rochester, Michigan, continues on the Bureau's Board as a director at large. He is also a member of the Board's Executive and Finance committees.



Walter W. Heller

was elected chairman of the Bureau's Board of Directors at the September 1971 annual board meeting. He first joined the Board in 1958 as a director by appointment of the University of Minnesota. Since 1965 he has served as a director at large and in September 1968, he was named vice chairman of the Board.

Professor Heller's outstanding career in government service makes him perhaps one of the best-known economists both within and outside the economics profession. At the conclusion of World War II, as the U. S. Military Government's Chief of Internal Finance in Germany, and later as a member of the ECA Mission on German Fiscal Problems, he played a key role in reshaping and stabilizing the German economic structure. In 1961 he became a member of the "New Frontier" as chairman of President Kennedy's Council of Economic Advisors, a post which he continued to hold

in President Johnson's administration until 1965, when he was named consultant to the Executive Office of the President. (It was while he was a member of the "Great Society" that Heller and Milton Friedman, a member of the Bureau's senior staff, engaged in the great debate—monetary versus fiscal policy. Four years later no one can yet declare a winner!) He returned to the faculty of the University of Minnesota in 1969 (he had been initially appointed in 1946), where he is currently Regents' Professor of Economics.

Throughout his career, Professor Heller has served as a consultant to numerous organizations—the United Nations, the Committee for Economic Development (since 1965 he has sat on CED's Research Advisory Board), the Organization for Economic Cooperation and Development, to name just a few. He was also tax advisor to King Hussein and the Royal Commission of Jordan during 1960, and between 1955 and 1960 he served as fiscal advisor to the governor of Minnesota.

Heller has been on the cover of *Time* twice and the subject of three major articles in *Business Week*. It was *Look* that dubbed him "Mr. Tax Cut" (June 1963), and he has livened up many households on Sunday afternoons with appearances on "Face the Nation," "Issues and Answers," and numerous exchanges on "Meet the Press." The National Bureau is indeed fortunate to have the "Top Seer for Economy" (*Business Week*, December 15, 1962), at its helm.



J. Wilson Newman

was named to succeed Walter W. Heller as vice chairman of the Bureau's Board of Directors at the September board meeting. (Coincidentally, the public announcement of his appointment was followed closely by his being named a member of President Nixon's Price Commission!) He has served the Bureau as director at large since 1965 and participated quite actively in Board affairs as a member of its Executive Committee.

J. Wilson Newman, for sixteen years chief executive officer, is now chairman of the Finance Committee and a director of Dun & Bradstreet, Inc. Following a brief experience in banking, Mr. Newman came to R. G. Dun & Co. in 1931 as a credit reporter, shortly before that company's merger with The Bradstreet Company. After several years of reporting, he was given a wide range of assignments, leading to his election as vice president in 1946. He was elected president in November 1952, and in May 1960 became chairman of the board, a post which he held until 1968. Under his leadership the company expanded its activities from its original credit reporting services to include the first large-scale system of computerized data for sales and marketing purposes, as well as other services in such fields as business ed-

ucation, plant site location, and a variety of investor services.

In addition to being named a member of the Price Commission, Mr. Newman, a lawyer by training (J. D., New York University Law School), was Chairman of The President's Task Force on Improving the Prospects of Small Business (1969), and since 1970 has been a member of the Commission on Bankruptcy Laws of the United States. He was also recently named a public governor of the New York Stock Exchange. He was a member of the Research and Policy Committee of the Committee for Economic Development from 1963 through 1966, and he was Chairman of CED's Finance Committee during 1966. His numerous other noteworthy affiliations have included membership on the U. S. Chamber of Commerce Committee on Economic Policy (1961) and on the New York Chamber of Commerce Executive Committee (1959-62), and chairmanship of that committee between 1960 and 1962.

It was largely through Mr. Newman's assistance that a vast array of Dun & Bradstreet statistics have been made available for use in a number of NBER research projects. As a Bureau director and now as vice chairman of its Board, he continues to play an increasingly important role in the Bureau's development.

NEW PUBLICATIONS

ANNALS OF ECONOMIC AND SOCIAL MEASUREMENT

Sanford V. Berg, editor

Institutional Subscription price: \$10.00 per year

Individual Subscription price: \$6.00 per year

Single copies: \$3.50

Published: Quarterly (first issue January 3, 1972)

The purpose of this new journal on computers, information retrieval, and research methodology is to promote the exchange of ideas in quantitative research. It will contain articles originating in the National Bureau's research program or other relevant programs, with particular focus on data generation, computer applications, and methodological problems.

It is hoped that by providing rapid and wide dissemination of research advances, the *Annals* will serve a catalytic role in improving techniques (particularly the application of computer technology) for economic and social measurement. Although research methodology will be stressed, descriptions of computer programs, information retrieval techniques, and data sets will also be published.

PRICE COMPETITIVENESS IN WORLD TRADE

Irving B. Kravis and Robert E. Lipsey

Price: \$20.00, 737 pp.

Published: June 14, 1971

Balance of payments difficulties experienced by the United States in recent years have frequently been explained by the statement that the United States has "priced itself out of world markets." Kravis and Lipsey believe this conclusion is often based on indexes derived from foreign trade unit values or domestic wholesale prices which are seriously defective for this purpose. They offer a number of specifications for a more effective price index for internationally traded goods, based on (1) actual prices or price offers, not unit values; (2) export rather than domestic transaction prices; and (3) compatibility of goods traded.

The authors conclude that it is feasible by their system to collect many types of data relevant to the measurement of international price competitiveness that have never before been assembled, to cover a wider range of complex manufactured products, and to avoid the dependence on list prices, which often produces illusions of price stability when prices are, in fact, changing. Their results should encourage government and international agencies to pursue the measurement of international price relations on a more comprehensive basis. Such measurements would add to an understanding of trade patterns and of changes in the balance of payments of industrial countries, and should also be useful in analyzing shifts in trade for specific groups of commodities.

MEASURING INTERNATIONAL CAPITAL MOVEMENTS

Walther P. Michael

Price: \$6.00, 148 pp.

Published: December 8, 1971

It is well known that the reported data on international capital movements as presented in balance of payments statistics are incomplete. In this study the author develops a matrix system of international capital flow accounts which permits analysis of flows by source and destination. The basic data on capital movements are the balance of payments data reported to and published by the International Monetary Fund, supplemented by estimates from other sources for transactions not covered by IMF. The period analyzed covered five years, 1950-54, for which the reported data were sufficiently detailed to undertake the project. Michael presents a detailed discussion of the methodology employed and the problems generated by data deficiencies.

THE POSTWAR QUALITY OF STATE AND LOCAL DEBT

George H. Hempel

Price: \$8.00, 176 pp.

Published: July 21, 1971

The use of debt has been extremely important to economic development throughout the world, bringing about opportunities for economic growth and prosperity, but at the same time entailing many problems and risks. Attempts to measure the effects of indebtedness have been notoriously inexact. In this study Hempel defines and measures the quality of state and local debt, which has grown at a faster rate than any of the other principal forms of marketable debt instruments since the end of World War II. While this increase has clearly facilitated the large growth in state and local services over the period, the author warns that if another serious economic decline should occur in the United States, widespread state and local debt payment difficulties would be a likely result. Hempel examines the past payment performance of state and local debt, and looks at the size of significant debt instrument and borrower characteristics in recent years, identifying those relevant to a measure of debt quality. He also analyzes changes in these characteristics and in the economic environment.

THE CYCLICAL TIMING OF CONSUMER CREDIT, 1920-67

Philip A. Klein

Price: \$3.50, 107 pp.

Published: September 30, 1971

The rapid increase in the volume of consumer credit in recent decades has attracted the interest of economists concerned with the impact of this development on general economic stability. In the National Bureau's first major study since the early 1940's of the turning points in consumer credit, Philip Klein examines the cyclical patterns of selected measures of consumer credit activity and analyzes their relationships to each other and to general economic activity.

Klein found that both total consumer credit and its major component, instalment credit, fluctuated much more widely from 1920 to 1967, on a year-to-year basis, than did GNP, and that the cyclical fluctuations of instalment (especially automobile) credit were systematically associated with indicators of general business activity. His results lead him to believe that the credit sector may ultimately play some role in determining the degree of general economic activity.

ESSAYS ON INTEREST RATES, VOLUME II

Jack M. Guttentag, editor

Price: \$15.00, 450 pp.

Published: September 27, 1971

The eight essays in this volume fall into three broad groups: patterns of interest rate fluctuation on a wide variety of instruments; the selected determinants of yield or "quality" on risk instruments; and determinants of maturity structure on riskless securities. Essays by Cagan and Diller examine changes in the cyclical behavior of interest rates relative to fluctuations in general business over a long period. Frankena, Fredrikson, and Cohan are concerned with the problems of the yield structure of interest rates. The term structure of interest rates on riskless (government) securities is dealt with in essays by Kessel and Sargent. In a second essay, Diller examines the expectations component of the term structure, which states that term structure at a point in time is determined by the market's expectations of future short-term gains.

MEASURES OF CREDIT RISK AND EXPERIENCE

Edgar R. Fiedler, assisted by Maude R. Pech

Price: \$12.50, 357 pp.

Published: January 12, 1972

Although a significant amount of research has been directed at determinations of credit quantity, the quality or riskiness of credit has been a neglected topic. Its role in our economic processes is neither well nor widely understood. Moreover, when the impact of credit risk is discussed, only one side of the problem is examined—what happens when too much credit is extended on overly generous terms to unreliable and unproductive borrowers. The alternative danger of too little credit provided on too conservative terms is only infrequently recognized.

Fiedler interprets the problem of credit risk as that of weighing and balancing the costs (risks) and benefits involved in reducing or increasing credit risk. He provides a comprehensive list of most of the known time series on the subject, supplying the data and charts for the most important of these series, making necessary adjustments in the data to facilitate their interpretation, and describing their current sources. Knowledge of what series exist and where they may be found, Fiedler hopes, will encourage business analysts to examine credit risk more carefully. The historical data charted supply a background against which future movements of these indicators can be evaluated.

A THEORETICAL FRAMEWORK FOR MONETARY ANALYSIS

Milton Friedman

Price: \$3.50, 69 pp.

Published: July 9, 1971

Milton Friedman contends that two well-known monetary theories debated by economists since the Great Depression are not as far apart as they seem. The differences are empirical, not theoretical. In documenting his thesis, Friedman examines the quantity theory and the Keynesian income-expenditure theory and suggests that the difference between the two is in an underlying assumption each one makes. The quantity theory assumes that real income is determined outside the system the theory describes; that is, the theory assumes "full employment." The income-expenditure theory assumes that the price level is determined outside the system the theory describes; that is, prices are rigid.

He then develops a simple model—the monetary theory of nominal income—that is consistent with both and forms the base for much of his work. He maintains that this method is superior to the other two theories for analyzing short-term economic changes and can be developed to explain issues not adequately dealt with previously: how a change in nominal income adjusts in the short run between prices and output; how nominal income adjusts in the short run to a discrepancy between the quantity demanded and the quantity supplied; and the transition between the short-run situation and long-run equilibrium.

REPRINTS

The following papers by Bureau staff members are available from the National Bureau in reprint form. Please address requests to the Publications Department.

Berg, Sanford V., "Increasing the Efficiency of the Economics Journal Market," *The Journal of Economic Literature*, Vol. IX, No. 3, September 1971.

_____, and Neville Beharie, "Innovations in Communication: the National Bureau of Economic Research and the Computer," *The American Statistician*, December 1971.

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The following papers by Bureau staff members are available upon request from the authors. The Bureau does *not* have a supply of these studies.

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