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The Prewar Origins of the NBER

As accounted in Herbert Heaton's *A Scholar in Action: Edwin F. Gay*, Jerome Greene, head of the Rockefeller Foundation, approached Edwin F. Gay and Frank Taussig of Harvard in 1914. The Rockefeller Foundation, which had long financed medical research, was interested in expanding to promote research in the social sciences. Greene proposed the establishment of a well-financed institute for economic research headed by a group of luminaries free to choose its own research agenda regardless of expense, with a well-paid director with as many associates as desired, a well-stocked library, and all other requisites (Heaton 1952, 91–92). Greene asked Gay and Taussig if such an organization would be likely to appeal to exceptionally talented scholars. Taussig was skeptical. He argued that the plan was too ambitious and that since enough good research was already being conducted in the universities the money would be better spent on existing institutions than on the competing institute that Greene proposed to establish.

Gay was more optimistic. He was an economic historian and the founding dean of Harvard's Graduate School of Business Administration, which had been established in 1908. He initiated the case method of study for the business school, brought Frederick Taylor, the founder of scientific management, to the faculty, and founded the Harvard Bureau of Business Research to help local businesses with their marketing. Gay believed that Taussig overestimated the quality and quantity of the research conducted at universities, most of which was individual and limited in scope. He therefore held that there was a place for

Greene's proposed institute and that it could attract top scholars provided it offered them satisfactory conditions. Encouraged by Gay's response, and with the approval of the trustees of the Rockefeller Foundation, Greene assembled a small group in New York in March 1914 to serve as an exploratory committee, with Gay as chairman.

Gay argued, in a memorandum prepared in June, that the proposed institute should not attempt any educational work directly but rather "strive to establish its reputation as a scientific, impartial and unprejudiced investigator" (Heaton 1968, 98–99) by undertaking studies that were beyond the scope of existing research universities and that would yield basic facts of interest to both economists and the public. He felt that these purposes would best be served by the collection of data on prices, wages, and rents and that Wesley Clair Mitchell should be placed in charge of this study. This proposal was submitted to the Rockefeller Foundation on August 4, 1914, the day World War I broke out in Europe. As might have been expected, the foundation recommended that, in light of the general preoccupation with the war, no further action be taken. Instead, it hired William Lyon MacKenzie King, an economist with a doctorate from Harvard University and former Canadian labor minister (and future prime minister), ostensibly to conduct research on American labor conditions but really to serve as an apologist for the Rockefeller family's labor policies. This approach proved a failure as both King and the Rockefellers were censured by the Congressional Committee on Industrial Relations. After the war, convinced by his advisers that funding the social sciences presented a simultaneous opportunity to benefit society and improve his public image, John D. Rockefeller Jr. arranged for the financing of some economic research projects but ensured that the family would be distanced from the conduct and results of that research. At that meeting, there was a prolonged discussion about what areas should be studied but "instant rejection of a suggestion by some outsiders that the institute embark on a campaign 'to teach the masses the fundamental ethical and economic principles underlying true prosperity'" (Heaton 1952, 92–93 [quote]; Smith 1994).

As explained in Fabricant (1984), the idea for an economic research institution came up again in 1916 when Malcolm Rorty, an employee

of the American Telephone and Telegraph Company, approached Gay. Rorty wanted Gay to organize and direct a study of the volume and distribution of American income to be conducted by the Harvard Business School. Gay replied that such a study was too large for the school and that the best approach would be to found a body like the one Gay and Greene had independently proposed earlier. Rorty was added to this earlier group, and later Nahum Stone was brought on. Rorty and Stone made an unusual alliance. Rorty was an engineer and statistician with degrees in mechanical engineering and electrical engineering from Cornell University. Stone was an economist and statistician with a doctorate from Columbia University who early in his career had translated Karl Marx's *Contribution to the Critique of Political Economy* into English (see Marx 1904). The two had met in 1915 at a hearing in New York over a proposed state law establishing a minimum wage where Stone testified in favor of the proposed legislation while Rorty testified against it. In 1916, Stone reviewed Scott Nearing's *Income* (1915) for the *Intercollegiate Socialist*, a left-wing publication circulated among college students. Nearing was a socialist with a doctorate in economics from the Wharton School who had twice been fired from academic positions for his radical political views. In his book, Nearing divided all income into service and property income and concluded that national income was approximately evenly divided between the two types of income. In his review, Stone argued that Nearing had left out several components of service income from his calculations, including the earnings of clerks and other professionals, agricultural workers, and those employed in public service, transportation, trade, and domestic service and that in reality about 70 percent of all national income could be classified as service income.¹

As Stone relayed the story at the twenty-fifth anniversary of the founding of the National Bureau of Economic Research, Rorty read his review and, expecting to "find a red hot diatribe on the unjust distribution of income under capitalism" (Stone quoted in Fabricant 1984, 4), was impressed by his objectivity and invited him to lunch.

1. Nearing's book was not well received by the profession. Besides Stone's review, see Adams (1916) and Young (1916).

The two agreed that more needed to be known about national income and its distribution and that an organization devoted to fact-finding on controversial economic questions of public interest would be of great benefit. They also agreed that the organization should be started by a group of well-known economists representative of every school of economic thought from extreme conservatism to extreme radicalism and to be led by a board of directors with representatives from all the country's organized interests. By June 1917, Rorty and Stone had formed the Committee on the Distribution of Income, which in addition to Gay included the economists Wesley Clair Mitchell of Columbia University, John R. Commons of the University of Wisconsin, Allyn Young of Cornell University, and T. S. Adams of Yale University as well as representatives from business and labor.

The group's objectives and plans were distributed in a memorandum stating that "the Committee [would] concern itself wholly with matters of fact, and [was] being organized for no other purpose and with no other obligation than to determine the facts and to publish its findings," and that it had "no conclusions or theories to advance and [assumed] no obligation to any subscriber other than to make and publish its determinations of fact." The entry of the United States into World War I diverted most of the committee's members to more urgent tasks. Stone headed the cost studies section in the office of the Quartermaster General of the Army, where he developed a new method of pricing government clothing contracts, eliminating the disadvantages of cost-plus agreements. Rorty served with the Ordnance Department and General Staff of the U.S. Army, with the task of purchasing ammunition and directing the shipment of arms. However, as will be seen, the war revealed the critical need for some type of institution to supply the organized statistical information about the economy needed for the country's urgent problems relating to war mobilization and reconstruction (Fabricant 1984).

The Role (and Limitations) of Economists in World War I

On June 3, 1916, the National Defense Act gave the president the authority to place orders for war matériel directly with suppliers, to

commandeer plants for defense purposes if necessary, and to appoint an industrial mobilization board. Subsequently, the Council of National Defense, a spinoff of at least two organizations created by private funds, was created (Hughes and Cain 2002). Although its membership included government officials, most of its responsibilities were carried out by an advisory commission consisting of leaders from business and labor. The council's first director was Walter S. Gifford, chief statistician (and later the head) of the American Telephone and Telegraph Company. Other members included Bernard Baruch, a financier who would play a key role in organizing the American economy for both world wars, Samuel Gompers of the American Federation of Labor, and Julius Rosenwald, president of Sears Roebuck and Company. At the time the council was created, the U.S. Army did not even have plans for the equipment and organization of a large military force. To fill this void, the council insisted that the military make estimates of the requirements of a large army while the council itself estimated the country's resources and identified existing and potential scarcities.

This work was aided by the creation of the Commercial Economy Board in March 1917. Its chairman was Arch W. Shaw, a former publisher of business magazines (including one that would ultimately become *Business Week*), a founder of the Kellogg Company, and a lecturer at the Harvard Graduate School of Business Administration. Edwin Gay was also named to the board. The board's main responsibility was "to investigate and advise in regard to the effective and economical distribution of commodities among the civilian population" (Heaton 1968, 98–99), with the hope that it would find economies in civilian consumption to release labor for the military and reduce the civilian demand for materials needed by war industries. It did this mainly by attempting to find wasteful commercial practices and persuade manufacturers to abandon them. It had no enforcement powers, however, and hence had to appeal to patriotism.

After war was declared, the Council of National Defense attempted to bring the U.S. Army and the U.S. Navy together to coordinate purchases. In all previous wars, the two services had competed freely against each other in the market of goods. However, in the wake of

industrialization, such a strategy would have resulted in bottlenecks that would have left tons of unfinished (and useless) military equipment clogging up production floors and warehouses. These attempts failed, however, and as a result the council created the War Industries Board in July 1917. It initially consisted of five civilians and one representative each of the army and the navy. However, it at first had no executive authority and failed to coordinate military purchases. It did not really become effective until after March 1918, when Bernard Baruch was made its head.

But, regardless of how efficient American production was or would become, the effort would have been of no use in World War I if supplies could not have been transported to Europe. When the United States entered the war, the assumption on both sides of the Atlantic had been that the chief American contribution would be money and munitions. But, after the defeat of the Italians at Caporetto in October 1917 and the withdrawal of the Russians from the war following the Bolshevik Revolution in November, which freed all German resources for the Western front, it became apparent that a much greater American commitment to the war would be necessary, which would require much greater shipping resources to get troops and matériel to the front.

It was the responsibility of the U.S. Shipping Board, established in September 1916, to find these resources. In August 1917, the board commandeered all hulls under construction in American yards and took control of all American ships over twenty-five hundred tons that were fit for use, creating the largest shipping concern in the world. However, ship operations were left in the hands of the owners, and the board made little attempt to direct these ships' comings and goings. As a result, "vessels were still in large measure free to go wherever there were good cargoes to be carried or picked up and fabulously profitable freights to be earned, especially on the routes to the markets that had been lost or deserted since 1914 by the British and Germans" (Heaton 1952, 105). To improve the board's effectiveness, it was imperative to improve the efficiency of ships already in service and to increase tonnage available for military use by restrictions on the importation of nonessential goods. In order to do this, three estimates

were necessary: the probable tonnage requirements of the U.S. Army and its allies; the kind, quantity, and volume, in terms of ship space, of nonessential imports; and the cargoes, routes, capabilities, and performance of existing ships.

Unfortunately, none of these data were available. To rectify the situation, Edwin Gay was brought on in December 1917. He proceeded to interview members of the military, suppliers, and shippers and arrange for the collection of the necessary statistical data from the statistics departments of the Council of National Defense and the War Department and from the U.S. Mission to Paris. He estimated that an additional 3.6 million tons of deadweight shipping would be needed during the next six months in order to carry out the nation's military program and deliver essential supplies to the Allies (Cuff 1989, 597). One obstacle was that power was divided, with the Shipping Board allocating ships and the War Trade Board, which had initially been established in October 1917 to ensure that U.S. exports did not reach the enemy, approving imports. To solve this problem, the Ship Control Committee was created, bringing all ships controlled by the U.S. government (including the army) under centralized control. In February 1918, President Wilson declared that no goods could be imported without a government license. To put this program in place, the Division of Planning and Statistics was created within the Shipping Board, with Gay as its director, to gather information about ships and imports. These data were sent to the War Trade Board, of which Gay had been made a member. As one of two representatives of the Shipping Board who was on the War Trade Board, Gay could explain the findings and recommendations of his division to the latter organization. To aid him, he assembled a list of experts drawn from university professors and business leaders, including Wesley Clair Mitchell and Henry S. Dennison, a paper manufacturer, social reformer, and member of the scientific management movement who had helped Gay develop the curriculum at the Harvard Graduate School of Business Administration.

As director of the Division of Planning and Statistics, Gay had two responsibilities. The first was to prepare a list of restricted imports. To do this, Gay and his staff had to collect data on the nature and uses of

imported commodities, alternative sources of supply, possible substitutes, stocks on hand, the shipping tonnage required for transportation to the United States, as well as the economic, financial, and political (both foreign and domestic) ramifications of restricting imports. Most of the data required for this analysis were severely lacking. For example, import statistics rarely gave country of origin or volume or weight of an imported commodity, making it difficult to calculate the ship tonnage space required for importation or the effect of the import ban on a friendly foreign power. Moreover, there were few data to show what happened to imports after they entered the country. In spite of this, the War Trade Board eventually put together a list of about two hundred imports to be restricted. By mid-1918, these restrictions released more than 1 million tons of shipping. This represented about 30 percent of the increase in shipping capacity for war purposes that Gay had originally called for or about 12 percent of the shipping under the Shipping Board's jurisdiction, which represented the lion's share of the shipping in the United States. Gay's second task was to ensure that the ships under the board's jurisdiction were used as efficiently as possible. This required the Division of Planning and Statistics to accumulate data on the complete inventory of every controlled ship and daily accounts of the movement of each ship to determine compliance with import restrictions, detect inefficiency in operations, and ensure maximum efficiency in the use of U.S. port facilities.

However, by mid-1918, a problem emerged. It was found that there was a large excess of actual shipping tonnage over that necessary for approved trade with South America and the Caribbean. When Gay reported this to P. A. S. Franklin, the chairman of the Ship Control Committee, Franklin informed Gay that this was no mistake and that Franklin intended to look after American interests in the Latin American market, even if this required flouting the import restrictions. To counter Gay, Franklin made a series of technical points in arguing that current shipping practices should remain unchanged, including that boats engaged in the Latin American trade were unfit for transatlantic shipping, that the surplus shipping to the area was only seasonal, and that triangular routing made his statisticians' analysis misleading.

The situation was exacerbated when Franklin made a public statement claiming that the British were still running ships exclusively for normal trade purposes in the western Atlantic while the United States had cut its trade to the bone, angering the British at a time when the United States was attempting to negotiate with them for the use of more of their ships (Heaton 1952, 119–23).

The situation came to a head on October 30 at the weekly meeting of the Tonnage Conference, which was attended by cabinet members, generals, admirals, and the chairmen of the relevant agencies. At this meeting, Franklin made his usual technical arguments to support the status quo. His colleagues from other government agencies, armed with data supplied by Gay, demolished his arguments and he was forced to concede defeat. As a result of the meeting, the Ship Control Committee was ordered to take all suitable vessels off nonessential trade routes at once, and the army insisted on reasserting control over the ships under its jurisdiction but agreed to let the Ship Control Committee operate them subject to advice from Gay and the War Trade Board rather than the Shipping Board. As a result of the meeting, several hundred thousand tons of shipping were taken out of civilian use and reallocated for military purposes. Although it is possible to exaggerate the importance of this episode (the October 30 meeting took place less than two weeks before the armistice was signed), it serves as one important example during World War I of an economist having an impact on policy, even over the objections of someone from an area with a more established hold on policy. It would foreshadow the much more important feasibility dispute of World War II (Heaton 1952, 119–23).

At around the time that the controversy with Franklin was developing, Gay was asked to create a division of planning and statistics for the War Industries Board. He found the organization's statistical apparatus to be in disarray. For example, there were no complete lists for either army contracts or steel suppliers. In addition to conducting several commodity studies, including an inventory of steel supplies, the division also established a price bureau under the direction of Wesley Clair Mitchell that produced price data for agencies controlling prices. It also helped conserve scarce resources for military

consumption by persuading producers of consumer goods to reduce the number of styles of products, inducing manufacturers to use substitute materials for ones needed by war suppliers, and persuading the armed forces to standardize many of the products that they consumed. It also got the U.S. Army to centralize its purchases, which had previously been conducted by at least seven separate branches working independently of each other.²

Finally, in May 1918, President Wilson asked Bernard Baruch, head of the War Industries Board, if it would be possible to create “some kind of organization through which we could have a sort of picture . . . of all the present war activities of the Government and upon that base a periodical checking up of the actual operations and results?” (Wilson to Baruch cited in Duff 1989, 605). In response, Baruch asked the various government agencies producing statistics to provide data so that the War Industries Board could produce a general report. After facing resistance, particularly from the War Department, Gay, at the request of the assistant secretary, Franklin Roosevelt, established within the War Industries Board the Central Bureau of Planning and Statistics. He found most agencies’ statements “almost entirely useless . . . They were more or less full of what the various departments were doing, all putting their best foot foremost” (Cuff 1989, 606). Moreover, many agencies continued to be reluctant to cooperate, particularly the army. However, the navy proved to be more cooperative, possibly as a result of the insistence of Roosevelt. To gain better data, Gay cultivated contacts in various government agencies and placed his own personnel with organizations that would accept them (Cuff 1989).

Another problem that Gay faced was the duplication of effort by the various federal agencies, with one agency collecting data that another already had, possibly in incompatible form. One consequence of this uncoordinated activity was that many businesses received multiple questionnaires from the federal government, frequently asking for the same information in such a form that the work had to be done

2. By the end of the war, Gay would also be named head of the War Trade Board’s Bureau of Research and Statistics and chairman of the Statistical Committee in the Department of Labor. He was thus simultaneously the head of statistical divisions in five separate government organizations (Cuff 1989, 603; Heaton 1952, 125–26).

all over again. To solve these problems, Gay established the Statistical Clearing House to tell inquirers what data had already been collected and where they were available. He also attempted to centralize the submission of questionnaires to private businesses. But, since the Central Bureau did not produce statistics, its staff remained quite small, with approximately sixty employees. About half these were experts, including perhaps ten economists. The Central Bureau also produced a number of reports on topics such as the railroad and fuel situations and published a weekly newsletter, the *Weekly Statistical News*, listing statistical projects under way or recently completed. Although the war ended before its policies could take full effect, the Central Bureau proved to be one of the most popular wartime agencies for business. Wesley Clair Mitchell's price bureau, for example, prepared a massive study of wholesale prices for about fifteen hundred commodities for the years 1917–18. Its research permitted both government policymakers and private businessmen to plan production and inventories. When the war ended, leading businessmen, administrators, and social scientists petitioned for the incorporation of the Central Bureau into the U.S. Department of Commerce. When President Wilson refused on the grounds that the government should not interfere in business, the NBER was established with private funds (Cuff 1989; Potter 1919; Smith 1994).

During World War I, the federal government practiced price control for the first time. In addition to the work of the Price Fixing Committee of the War Production Board, three other government organizations engaged in price control: the Food and Fuel Administrations and the Bureau of Transportation and Housing. The first three organizations were independent agencies responsible to the president, while the fourth was in the Labor Department. Although Bernard Baruch was made chairman of the Price Fixing Committee, prices were left outside his direct control, with the aim of separating price-fixing from other parts of the War Industries Board in order to cloak it with a quasi-judicial appearance. In part, this reflected President Wilson's aversion to concentrating economic power, and, in part, it was a response to critics who charged that the "dollar-a-year" men, War Industries Board volunteers from the private sector, remained loyal to

the companies with which they had served before the war and that continued to pay their salaries. The board could not do without them, but they would not be allowed to use their power to gain excessively high prices for their firms. Although the Price Fixing Committee did little to stabilize the cost of living directly, it did reach a compromise with industry calling for the production of limited styles within certain price ranges (Rockoff 1984, 46–50).

The membership of the Price Fixing Committee reflected this intent; in addition to Baruch, the committee included representatives of labor, the U.S. Army and Navy, and the Federal Trade Commission. Other members included Robert S. Brookings, a prominent businessman, philanthropist, and founder of the Brookings Institution; Harry Garfield of the Fuel Administration; and Frank Taussig, one of America's leading economists, who had been consulted by Jerome Greene on the possible founding of an economic research institute. Taussig spent his entire academic career at Harvard University, from which he had received his doctorate in economics in 1883, and where he served as the editor of the *Quarterly Journal of Economics* for more than forty years. He first became known for *The Tariff History of the United States* (1882/2009), which went through seven subsequent editions and established him as the leading authority on U.S. tariffs. In 1911, he published *Principles of Economics*, which would become one of the leading textbooks in the United States and England. The fourth and final edition of this work appeared in 1939. Another important work was *International Trade*, published in 1927 and considered the first important book in that field. Despite his conservatism (he opposed a minimum wage for female workers and the federal income tax and was an advocate for hard money), Taussig encouraged dissenting viewpoints as an editor and teacher. He also served in several government posts on the local, state, and federal levels, the most important being as the first chairman of the U.S. Tariff Commission, a post he held from 1917 to 1920. In this capacity, his goal was to proceed cautiously from research to recommendations on the basis of facts that would supplant the political motives on which tariff legislation had been previously based (Keene 2000; Schumpeter, Cole, and Mason 1941). The position was particularly important because tariff revenues had been the

dominant source of federal revenues until the passage of the Sixteenth Amendment to the U.S. Constitution in 1913, which allowed for the federal income tax.

In addition to the Price Fixing Committee, three other federal agencies dealt with price controls during World War I. The first was the Food Administration, which was dominated by Herbert Hoover as food administrator. His authority came from the Lever Act, which was as much concerned with excessive business profits as it was with price controls. It prohibited all “excessive” prices (namely, those that produced excessive profits) and, to enforce the prohibition, gave the food administrator the power to issue and revoke the licenses of dealers in commodities deemed necessary, to requisition commodities for the armed forces, and even to seize firms when necessary. For the most part, the Food Administration did not attempt to fix the prices of foodstuffs; rather, it limited the markups of middlemen and retailers to those prevailing in the prewar period in order to prevent war profiteering. Eventually, the it did impose price controls on a few commodities, the most important of which were sugar and wheat. A second agency applying price controls was the Fuel Administration, which had been set up in the summer of 1917 in response to a large spike in coal prices. It was headed by Harry Garfield, a lawyer and former president of Williams College. To control prices, the agency practiced bulk-line pricing, whereby the government set a price high enough to cover the costs and purchase the output of most of the nation’s coal mines and then allocate it to military and civilian production and consumption. The exceptionally cold winter of 1917–18 saw the country’s first energy crisis as a result of excessive demand for coal and the unusual demands on the railroad system imposed by the war effort. The Fuel Administration responded by closing all but a few coal-burning factories for several days, ordering nonessential industries such as breweries to cut back on their use of coal, and prohibiting the shipment of coal over long distances. The third federal organization that attempted to control prices during World War I was the Bureau of Transportation and Housing in the Department of Labor, but its enforcement powers were limited to appeals to patriotism, threats of punitive action by other government agencies, and the

organization community committees to settle rental disputes (Rockoff 1984, 50–64).

The federal agencies set up in World War I to control prices accomplished their purpose. From May 1916 to August 1917, when controls were imposed, wholesale prices rose at an annual rate of 32.4 percent. After controls were imposed, the rise in wholesale prices fell to 7.1 percent per year. Although this was facilitated by a reduction in monetary expansion, monetary factors alone cannot account for the fall in inflation. Moreover, inflation was controlled “without the imposition of a large bureaucracy and without substantial damage to the productive side of the economy” (Rockoff 1984, 83).

World War I was a turning point in the use of economists in government. As the historian Ellis Hawley put it: “Economic inquiry for purposes of managing the economy as a whole had its real beginnings during World War I, at least insofar as it was done by credentialed professionals” (Hawley 1990, 288–89). Economists had, however, been used periodically by the federal government for congressionally authorized investigatory bodies, 25 specialists in economic and political science working for the federal government in 1896, a figure that rose to 848 during the Herbert Hoover administration (White 1933, 271–72).

Nevertheless, it is possible to overstate the influence of economists in this period. Altogether, about 120 members of the American Economic Association worked in Washington for the federal government during World War I, representing about 5 percent of the association’s total membership (Fisher 1919).³ This is not a large number given that some 5,000 government agencies were created during the war (Hughes and Cain 2007, 450). Moreover, with the possible exception of Edwin Gay, economists did not have much of an impact on policy. They were primarily used to assemble facts and statistics, which might or might not be used by policymakers. This fact was lamented by Jacob Hollander of Johns Hopkins University in his presidential address to the American Economic Association in 1921. Hol-

3. The membership total of 2,222 is taken from “Report of the Secretary” (see Fisher 1919, 357).

lander argued that, while physical scientists saw a rapid mobilization and the ready acceptance of their advice, the mobilization of economists was much slower and economic policy decisions were made by others. He complained: “Of the whole company of American economists, . . . not a single figure was in the first instance chosen . . . to exercise formative, determining influence in the economic conduct of the war” (Hollander 1922, 9). Even many of the top statisticians used in government came from business rather than academe. The limitation on the use of economists in World War I can be seen in the composition of the American delegation to the Paris Peace Conference. Although the Central Bureau was named as the official source of economic data for the American delegation, only two economists, Taussig and Allyn Young, were named to the delegation, which contained no representative of the Treasury Department, the War Industries Board, or any other agency that dealt with international economic questions.

The Founding of the NBER

In December 1918, the American Statistical Association (ASA) and the American Economic Association (AEA) held their joint annual meeting in Richmond, Virginia, in part to accommodate members who had been engaged in war work for the federal government (Alchon 1985, 38). The conference was, in particular, focused upon “C[redentialed] economic inquiry [that] a number of prominent government and business figures . . . believed could greatly enhance a society’s capacity for planning” (Bernstein 2001, 40). The highlight of the meeting was presidential addresses by Wesley Clair Mitchell of the ASA and Irving Fisher of the AEA. Mitchell observed that World War I “led to the use of statistics, not only as a record of what had happened, but as a vital factor in planning what should be done.” After the success of the application of statistics to problems of war, he suggested, statistics could be applied with equal success to problems of peace, and the application of statistics to the social sciences in the same way that it had already been applied in the physical sciences and industry could be used to achieve social harmony by promoting

steady reform without class struggle. To do this, he called for the continuation of the Central Statistical Office or some similar organization “to consider the statistical needs of the government as a whole, . . . to lay systematic plans for meeting these needs,” and to put relevant statistics “before the men whose decisions are important to the country, whether these men be administrators, legislators or voters” (Mitchell 1919, 234–35).

In his presidential address to the AEA, Irving Fisher called for the scientific study of the distribution of income and wealth and the causes of this distribution as a way of alleviating social conflict and argued that, provided that they maintained their independence and impartiality, economists would be in “the enviable position of being the logical arbiters in the class struggle now beginning—arbiters which both sides can trust.” For this to happen, Fisher recommended the creation of two new agencies, “one designed to diffuse such economic knowledge as we possess, . . . the other designed to increase that knowledge.” In order to accomplish this, he recommended:

There should be created an endowment for economic research, in the management of which labor, capital and economists would . . . share, and which would be a sort of laboratory for the study of the great economic questions before us. Today the physical sciences have their great laboratories as a matter of course. But the economist is expected to secure his own facts and statistics and make his own calculations at his own expense. Expensive research, far beyond the reach of the professor’s purse, is necessary if the economist is to be of any important public service in studying wealth distribution, the profit system, the problem of labor unrest, and the other many pressing practical problems. (Fisher 1919, 11, 19, 20)

As discussed, the groundwork for what would become the NBER had been laid before the U.S. entry into World War I, and the war-time experience revealed the lack of quantitative information necessary for the urgent needs of mobilization and reconstruction, thereby strengthening Malcolm Rorty’s hand. In December 1919, the Commonwealth Fund, which had been chartered in 1918 by Stephen Hark-

ness (whose father had been an early partner of John D. Rockefeller's) to "do something for the general welfare of mankind," had with some skepticism agreed to underwrite the new organization with a one-year grant of \$20,000 (Alchon 1985, 56–57). The NBER was incorporated the following month with Edwin Gay as its first president. The charter stated that the organization was formed to "encourage, in the broadest and most liberal manner, investigation, research and discovery, and the application of knowledge to the well-being of mankind; and in particular to conduct . . . exact and impartial investigations in the field of economic, social and industrial science, and to this end to cooperate with governments, universities, learned societies and individuals" (Fabricant 1984, 7). The charter called for representation on the board of directors by appointment one member each of the AEA and the ASA as well as representatives of labor, employers, manufacturing, banking, farming, engineering, and the law. Initially, there were also plans for having representatives from the Federal Reserve Board and economics departments from various federal agencies, but these were dropped when the Commonwealth Fund objected that the appointments would be too political. In 1927, the economics departments of six universities—Harvard, Yale, Columbia, Chicago, Wisconsin, and Pennsylvania—would also have representatives on the board (Hawley 1990, 303). Initial directors at large included Edwin Gay, Wesley Clair Mitchell, T. S. Adams, John R. Commons, Allyn Young, and Nahum Stone. Directors by appointment included Arch Shaw and Malcolm Rorty; the latter succeeded Gay as president in early 1922.

Wesley Clair Mitchell was the NBER's first director of research, a position he held until 1945. After receiving his undergraduate degree from the University of Chicago, Mitchell stayed on at that institution to study philosophy and economics. The three teachers that he was most influenced by were the philosopher John Dewey and the economists Thorstein Veblen and J. Laurence Laughlin. Laughlin was the first chairman of the University of Chicago Economics Department and the founding editor of the *Journal of Political Economy*. He was a laissez-faire economist who opposed an inflationary expansion of the money supply and came to oppose the quantity theory of money. He interested Mitchell in monetary theory and suggested the federal

government's issue of greenbacks, or paper currency, during the Civil War as a case study of the effect of paper money on an economic system. Mitchell found that the primary influence on prices was not the amount of greenbacks in circulation but the changing fortunes of the Union army. Moreover, by finding that during the Civil War real wages fell and nominal wages did not rise as fast as prices, Mitchell could show workers, to whom much of the inflationist propaganda was addressed, at least one case in which an inflationary monetary policy had been disastrous to their interests. More importantly, his thesis, published as *A History of the Greenbacks* (1903), was a pioneering work of statistics that showed the relation between money, prices, and wages (Smith 1994; Smith 2000).

Mitchell received his doctorate in economics from the University of Chicago in 1899 and left for the University of California, Berkeley, in 1903. While there, he became convinced that the future of economics lay in the collection of data and that the booms and busts of the capitalist economy were the nation's most pressing economic and social problem. He held that, if economists had sufficient information on business cycles, they could determine how the various aspects of the economy were interrelated and control these fluctuations. In *Business Cycles* (1913), he discussed the various theories about business cycles and provided detailed statistical records on business cycles between 1908 and 1911. This work demonstrated for the first time what statistical work could do. It was the first investigation of business cycles that permitted the investigation of the several factors at work simultaneously. Mitchell concluded that all the theories about contractions—excess savings, political uncertainty, tight money, overproduction, a decrease in construction, weather, and even sunspots—might be correct. Although he admitted that he could neither test these theories nor provide a new one that explained all the data he had gathered, he hoped that his work would provide the groundwork on which subsequent researchers could build (Smith 1994; Smith 2000).

Arthur Burns (1952, 23) called *Business Cycles* the most influential economic work between Marshall's *Principles of Economics* (1890) and Keynes's *General Theory* (1936), while John Maurice Clark (1931, 662) called it the "formative type" for the rise of quantitative economics. In

1913, Mitchell joined the faculty of Columbia University. In 1918, he helped found the New School for Social Research, where he taught for three years. He came to feel, however, that, because it did not grant degrees, the school was handicapped in attracting top students, so he returned to Columbia at the urging of his former colleagues (Dorfman 1959a, 360). He was the head of the AEA in 1925, and that organization awarded him the first Francis A. Walker Medal in 1947, given every five years (until 1977) to the individual who has contributed the most to the study of economics.

Under Gay and Mitchell's leadership, the NBER became immensely successful. While the Brookings Institution, which had been founded in 1916 as the first private research institute unaffiliated with a major university, achieved an enviable reputation as the result of the high quality of its research staff, its engagement with specific policy issues and its increasing identification with the Democratic Party gave it a reputation for partisanship (Bernstein 2001, 42). In contrast, the NBER insisted that its goal was to present economic facts in a scientific fashion, free from all bias and propaganda. Mitchell insisted that all reports be free of policy recommendations. The NBER as an institution had no opinion on social issues. To further ensure objectivity, each member of the board of directors had to approve a report before the bureau would accept and publish it. Moreover, any member of the board could append a qualifying or dissenting opinion to the report. These safeguards "effectively weeded out all opinions and recommendations; only a completely factual study could survive such scrutiny" (Smith 1994, 65). Moreover, all research was required to have public relevance and be practical in terms of understanding not just the economy as a whole but also the needs of the businessmen who funded the research.

National Income

The subject selected for the bureau's first study was that which had started the discussion between Rorty and Stone—the distribution of national income—but it was not limited to this. The size and industrial composition of national income were also examined, along with

its growth and fluctuations beginning in 1909. To calculate real as well as nominal income, NBER staff went on to extend existing price indices as well as calculate new ones (Fabricant 1984, 11). This would be not only the most sophisticated assessment of national income yet produced but also the first comprehensive survey of the war's effect on the volume, contribution, and distribution of national income (Alchon 1985, 59). To ensure accuracy, two estimates were made, each based on separate data. The first approach, based on estimates of the commodities and services produced by all the extractive, transportation, manufacturing, financial, and government enterprises working in the United States, was conducted by Willford King, who had received his doctorate in economics from the University of Wisconsin in 1913 and worked as a statistician with the U.S. Public Health Service.

Using an eclectic mix of statistics, including "1901 worker survey data, 1902 Chicago Wages, 1914 Tax returns of top incomes, Wisconsin state income tax returns and other odds and ends," King had published his first estimate of national income in 1915 as *The Wealth and Income of the People of the United States*. The second approach, based on estimates of personal income together with the undistributed incomes of business and government, was led by Oswald Knauth. In June 1921, when the two independent estimates were compared for the period 1909–19, it was found that the largest discrepancy for any year was less than 7 percent and that the average discrepancy was only about 2 percent per year.

The study was published in 1921 and 1922 in two volumes, a small summary and a more detailed report of evidence and methods (NBER 1921b, 1922a).⁴ The study concluded that per capita income was much larger in the United States than in any other country, that most of the increase in income occurring during World War I was due to an increase in prices, and that, while the distribution of income was highly inequitable, with the top 1 percent of income earners receiving 14 percent of all income and the top 5 percent of all income earners receiving 26 percent of all income, the war had acted to diminish income

4. A third volume, *Distribution of Income by States in 1919* (Knauth 1992), was also published.

inequality (NBER 1921b, 143–47). In the first annual report of the director of research to the Board of Directors, Mitchell concluded that national income was scarcely large enough to secure a decent standard of living for all American families and that the primary economic problem was to increase production and improve distribution of staple commodities (NBER 1921a, 10). Although the study did not receive widespread public attention, it was well received by the social science communities (Alchon 1985, 62–63). Writing in 1948, Arthur Burns concluded that the initial national income study “won public and professional support for the National Bureau in its early years of struggle” (quoted in Fabricant 1984, 11) and, as Fabricant put it, “more than anything else, helped to establish the reputation of the Bureau for thoroughness of work” (1984, 11).

The President’s Conference on Unemployment

In 1920 and 1921, the United States suffered its worst contraction since the 1890s. Following a vigorous postwar boom, the Federal Reserve, facing a decline in its gold reserves, sharply raised the discount rate. At the same time, government spending declined by more than 70 percent in nominal terms from 1919 to 1921, and agricultural prices fell sharply as European production recovered from the war. As a result, nominal net national product fell by 18 percent from 1920 to 1921 (the drop in real terms was 4 percent), while unemployment rose to 11.7 percent in 1921 (its highest rate since 1898) (Hughes and Cain 2007, 444–54; Rockoff and Walton 2005, 427–28; U.S. Bureau of the Census 1975, 135).

In response to the contraction of 1920–21, Herbert Hoover, the new secretary of commerce under President Warren Harding, convened the President’s Conference on Unemployment. Hoover, who served as secretary of commerce from 1921 to 1928 and who, according to a colleague, considered himself “Undersecretary of all other departments” (Barber 1985, 5), may have been one of the most powerful cabinet members of all time. He dominated the conference by setting the agenda and by carefully selecting the participants (Alchon 1985, 76). He also asked the NBER to prepare the conference’s report on

unemployment and business cycles within six months. Gay replied that since the topic dealt with issues that the bureau had already planned to undertake—as mentioned, Mitchell was one of the country's foremost authorities on business cycles—the NBER would undertake the work provided that the report would be submitted to the NBER's Board of Directors for approval before being sent to the conference, that the NBER would be free to publish its findings separately if it so desired, that the report would be confined to ascertaining facts, and that the money could be found to meet the bureau's expenses. Hoover agreed to the conditions and arranged for the Carnegie Corporation to provide a \$50,000 grant to finance the study (NBER 1922b, 6–7). The study was prepared by the NBER's own staff and outside experts from universities, private organizations and charities, and U.S. government agencies.

The study was released as *Business Cycles and Unemployment* (Committee on Business Cycles and Unemployment 1923). Hoover wrote the introduction. It emphasized the importance of the dissemination of statistical information if business cycles were ever to be brought under control. It also stressed the need to use public and private construction funds countercyclically to moderate the effect of booms and busts while noting the critical role that the Federal Reserve could play in moderating the business cycle. But what the report emphasized most was the role of the individual businessman in moderating the business cycle by avoiding excessive expansion during booms and excessive contraction (including cutting nominal wages) during busts. Public reaction to the study was mixed: business and social science reviewers expressed approval, while the reform community was disappointed with the report's failure to endorse compulsory unemployment insurance (Alchon 1985, 107–8), which Hoover strongly opposed. Throughout the 1920s and 1930s, he remained opposed to both laissez-faire capitalism and bureaucratic coercion, preferring voluntary cooperation among private organizations and labor as a way to lessen the swings of the business cycle and to avoid class conflict.

In addition to the final report, the NBER also published a second book resulting from its work for the President's Conference on Unemployment. In planning its survey of cyclic unemployment, the bu-

reau found that there was no consensus on what the number of unemployed actually was in 1921, with estimates ranging from 2.1 to 5 million. To rectify this situation, Willford King was put in charge of a study estimating the number of people employed in every quarter from 1920 to March 1922. With the cooperation of three federal agencies (the Department of Agriculture, the Bureau of the Census, and the Bureau of Railway Economics) and of many private organizations and individuals, King obtained the most accurate figures to date on employment, finding that the total number of employees on all payrolls had shrunk by about one-seventh between the third quarter of 1920 and the third quarter of 1921 and that total employment in hours fell by about one-sixth (King 1923).

Government Agencies Performing Economic Analysis in the 1920s

The major federal agencies performing economic analysis during the 1920s were the Bureau of Agricultural Economics (located in the Department of Agriculture) and the Bureau of the Census and the Bureau of Foreign and Domestic Commerce (both located in the Department of Commerce), the Bureau of Labor Statistics (located in the Department of Labor), and the Federal Reserve Board (an independent agency). The most important functions of the federal government requiring economic analysis were managing the nation's money and banking system through the Federal Reserve and providing aid to farmers as they struggled through the 1920s (Duncan and Shelton 1978, 13).

When Henry C. Wallace (a former editor of a leading agricultural magazine and the father of Henry A. Wallace, who would serve as vice president in the third Franklin Roosevelt administration) became secretary of agriculture in 1921, he was "convinced of the importance for agriculture of economic analysis by statistical methods." To that end, he combined three existing bureaus within the Department of Agriculture into the Bureau of Agricultural Economics (BAE). This agency soon became recognized for the quality of its staff, which developed and applied correlation and regression methods earlier than any other federal agency. In most other agencies, analysis was limited

to the compilation of statistics, with masses of clerks transcribing and totaling raw data. There was no scientific sampling, no federal national income and product accounts (except for a onetime study in 1926 by the Federal Trade Commission), and no interagency coordination. Although punch-card machines had been invented, their use in the federal government was extremely limited (Duncan and Shelton 1978, 10 [quotation], 14).

By 1924, the BAE established a public research institute, complete with a research director, a graduate school, and research projects. However, the BAE quarreled with two of the most important leaders in the collection of statistics during the 1920s, the NBER and Herbert Hoover. Many of the BAE studies were linked to an emerging theory of agricultural economics that rejected laissez-faire remedies for agricultural distress, seeking instead to use the government to restrict agricultural output. Hoover and, to a lesser extent, the NBER saw the BAE as a political agency (rather than a scientific one) whose claims of disinterestedness and economic analysis were tainted by its political views. Hoover ultimately succeeded in having the head of the BAE ousted, and the organization became more circumspect in its policy prescriptions (Hawley 1990, 296, 310–12).

When Herbert Hoover became secretary of commerce, he directed the Bureau of the Census to collect the available data on the production, stocks, sales, and prices of various commodities and to make the data available for use by business by publishing them in a new monthly publication, the *Survey of Current Business*. Originally, the *Survey of Current Business* included little original material; it assembled various current economic statistics from government sources, commercial journals, and trade associations and put them into more useful form. Over the course of the 1920s, the Bureau of the Census began compiling its own statistics for many industries. The Bureau of Foreign and Domestic Commerce (BFDC), which had been created within the Department of Commerce in 1913, was the other major bureau within the department conducting economic analysis during Hoover's tenure as secretary. The BFDC's most important work during the decade started in 1923, when it began issuing estimates of the balance of payments, which was one of the first examples of the preparation and

publication by the federal government of economic estimates rather than mere compilations (Duncan and Shelton 1978, 11).

As mentioned previously, the data on unemployment in the early 1920s were particularly bad. At the President's Conference on Unemployment, when the question of the number of unemployed people came up, the matter was actually put to a vote among the conference participants. One reason for the lack of data on labor was that the subject was largely seen as a state and local rather than a federal matter. The federal agency primarily responsible for the collection of such data was the Bureau of Labor Statistics, but before the Great Depression it was small and conducted research only on an ad hoc basis, with monthly published data limited to employment and payrolls in manufacturing along with some data on prices (Duncan and Shelton 1978, 18–19). The final federal agency responsible for economic analysis during the 1920s, the Federal Reserve Board, collected weekly data on the money supply and debits, or claims against the deposits of, member banks. However, there were few data on nonfarm real estate and mortgages, or on who borrowers were, or what the loans were used for.

Role of Private Foundations

Private foundations played a crucial role in the founding of the NBER. Among the philanthropic organizations funding the social sciences in the period between World War I and the Great Depression were the Carnegie Corporation, the Russell Sage Foundation, and the Commonwealth Fund. However, the most important was the Laura Spelman Rockefeller Memorial Fund, which funded the NBER along with the Social Science Research Council (SSRC) and the Brookings Institution, and which was responsible for much of the fortyfold increase in philanthropic support for the social sciences that occurred during this period (Alchon 1985, 117). From 1922 until 1929, the head of the Spelman Fund was Beardsley Rumel, a University of Chicago Ph.D. in psychology and education who had helped develop the U.S. Army's aptitude tests during World War I and who would later serve as the dean of the University of Chicago's Division of Social Sciences. In an

important memorandum written shortly after becoming head of the Spelman Fund, he suggested guidelines for the funding of research in the social sciences, holding that the fund should support only empirical research that had practical applications. Under his guidance, the fund distributed more than \$58 million for research in the social sciences during the 1920s (Smith 2000, 26–27). To avoid controversies such as the MacKenzie King affair discussed previously, Ruml “refused to fund organizations concerned with legislation, to become involved in any social or economic reform, to try to influence findings or even deal directly with researchers, or to fund non-empirical studies” (Smith 2000, 26).

Along with other philanthropic organizations, the Spelman Fund provided the initial funding for the SSRC. The SSRC was founded in 1923, with representatives from the American Political Science Association, the AEA, the ASA, and the American Sociological Society to encourage coordination and collaboration among the social sciences. Its first projects were efforts to improve government statistics, to support cooperative research on the subjects of immigration, agriculture, and crime, and to conduct a joint analysis of research methods and their complementarity throughout the social sciences. Its goal “was a social science capable of the kind of analysis ‘so common in the natural sciences where the same subject is attacked by a variety of research workers simultaneously from different angles, where the same question is subjected to repeated investigations, and where comparative studies are the order of the day’” (Alchon 1985, 114–16).

The physical manifestation of the ideas of the Spelman Fund and the SSRC was the construction of the Social Science Research Building at the University of Chicago, completed in 1929. Paid for by the Spelman Fund, it represented Ruml’s vision of the ideal physical setting for the social sciences. Floor space was flexible to allow for the development of cooperative, interdisciplinary research. There were only a few lecture rooms and no space at all for books, and most of the rooms were filled with gadgets to measure and enumerate data (Smith 2000, 28). Under the bow window of the Fifty-Ninth Street side of the building were chiseled the words of Lord Kelvin: “When you can measure what you are speaking about, and express it in numbers, you

know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind.”

Committee on Recent Economic Changes

The United States had enjoyed fairly steady economic growth and rising living standards since 1921, while Europe was undergoing labor unrest, debt and exchange problems, and recurrent economic contractions. Because of this success, Herbert Hoover argued that it was time to reconvene another unemployment conference to study the progress that had been made since the depression of 1920–21. He was also concerned that the general prosperity was hiding dangerous developments, such as weakness in agriculture, textiles, and coal mining. As a result, the Committee on Recent Economic Changes was convened in late 1927. Its secretary saw the committee as a kind of private national planning board, composed of senior “public men” advised by a permanent staff of skilled economists, engineers, and other professionals, whose purpose would be “to submit to the public not simply basic facts, but plans of action” (Alchon 1985, 132). Once again, the NBER was called on to write the committee’s report, with expenses to be met by grants of \$75,000 each from the Carnegie Corporation and the Spelman Fund. However, unlike the previous President’s Conference on Unemployment, which had been at least nominally directed privately, the Committee on Recent Economic Changes was to be organized by the federal government, with Hoover as the chairman.

The committee first met in February 1928, and its report was published a little over a year later (see Committee on Recent Economic Changes 1929). In addition to the NBER, about thirty scientific, labor, and professional organizations and over thirty colleges and universities and nine government agencies provided, with the chapters based on this information written by the NBER’s staff along with eleven outside experts chosen to study particular topics (Alchon 1985, 146). The report attributed most of the growth since 1921 to improvements in the training and practice of managers and an increase in consumption

resulting from higher incomes, consumer credit, and mass advertising, which had been sufficient to absorb the increase in production that had brought about the growth of the 1920s. Although it noted that employment in manufacturing had declined owing to increases in productivity, that industry concentration had increased, and that certain industries, particularly agriculture, remained distressed, it concluded that, as long as demand remained strong, continued prosperity was likely (Barber 1985, 66–68; Alchon 1985, 149). Although the report was well received, it contained no hint of the coming cataclysm and would later be faulted as hurried and ill considered, subject to too much pressure from an arbitrary deadline imposed by Hoover (Alchon 1985, 148–50).