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## **The Origins of the *Survey of Current Business* A Window on the Evolution of Economic Policy, Research, and Statistics**

*By Andrew D. Reamer*

For decades, the *Survey of Current Business*, the flagship monthly publication of the Bureau of Economic Analysis (BEA), has provided macro-, industry, international, and regional economists with data, analysis, and methodological research concerning the national economic accounts. This was not always so.

The *Survey* was founded in July 1921 as Department of Commerce (DOC) Secretary Herbert Hoover's primary tool to promote macroeconomic stabilization. Specifically, the *Survey* published current, detailed industry-specific data from hundreds of public and private secondary sources so businesses might make better operational and investment decisions. One decade and a Great Depression later, the extensive statistical clearinghouse feeding the *Survey* became the foundation for Simon Kuznets' famed study of national income and the subsequent development of national economic accounting.

The *Survey's* creation and its later repurposing were the results of efforts by economists Edwin Gay and Wesley Mitchell, largely through a series of collaborations with Hoover between 1921 and 1933. As members of Hoover's Joint Census Advisory Committee, Gay and Mitchell recommended the *Survey's* development, modeled on the statistical clearinghouse they created to guide federal economic planning in the First World War. As founding leaders of the National Bureau of Economic Research (NBER), they guided path-setting studies of national income and business cycles, several commissioned by Hoover; trained and hired Kuznets, who contributed to several NBER studies, including one for Hoover; and detailed Kuznets to the DOC to prepare the groundbreaking national income report.

This article begins by describing the *Survey's* role in economic stabilization policy in the 1920s and the development of national economic accounting in the 1930s. The succeeding sections unpack this story by delving into how the *Survey* came to play these successive roles, particularly through Gay, Mitchell, and Hoover's efforts.

*As part of BEA's commemoration of the centennial of the Survey of Current Business, we are pleased to present this article by Andrew D. Reamer, a research professor at the George Washington Institute of Public Policy at George Washington University. Dr. Reamer's research efforts, intended to inform the public and decisionmakers, aim to encourage U.S. national economic development and competitiveness. Focus areas include strategic economic analysis and policy, innovation and entrepreneurship, workforce development, and the federal economic statistics system.*

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## **The Survey's Role in Economic Stabilization and National Economic Accounting: 1921–1934**

Soon after he took office in March 1921, Secretary Hoover created the *Survey* as his key tool for macroeconomic stabilization. At the time, the United States was in a major recession. Hoover thought the federal government could ameliorate business busts and booms by enabling corporations to see and act on current trends in supply, demand, and price, by sector. Layoffs due to excess inventories served as Hoover's case in point—he believed current, accurate statistics would help control overproduction.<sup>1</sup>

A highly regarded engineer and wealthy businessman, Hoover led a series of war relief organizations in Europe and the United States between 1914 and 1919, becoming “the best known of the nation's war managers.”<sup>2</sup> Postwar, Hoover envisioned a new approach to macroeconomic stability through engineers, business, and labor collaborating to identify ways to eliminate waste broadly defined, including unemployment and underemployment.

To that end, he organized a new Federated American Engineering Societies (FAES) and, as its first president, created a Committee on Elimination of Waste in Industry in January 1921. Two months later, Hoover became Commerce Secretary. Three months after that, the Waste Committee recommended the creation of a National Industrial Information Service “to furnish timely, regular, and complete information on current production, consumption and available stocks of commodities” to business decisionmakers and a National Statistical Service to ascertain “employment requirements and conditions throughout the country.”<sup>3</sup>

Once in office, Hoover asked the DOC Joint Census Advisory Committee—with seven members from the American Economic Association and the American Statistical Association—to make recommendations to improve the Department's statistical services. Chartered by the Wilson Administration to advise on the 1920 Census, Hoover expanded the Joint Committee's scope to include DOC's economic statistical programs. Days after the Waste Committee presented its findings, the Joint Committee gave Hoover several “urgent recommendations,” including one that the DOC should regularly publish detailed data on activities in each of the nation's key industries as a means of facilitating macroeconomic stability.<sup>4</sup>

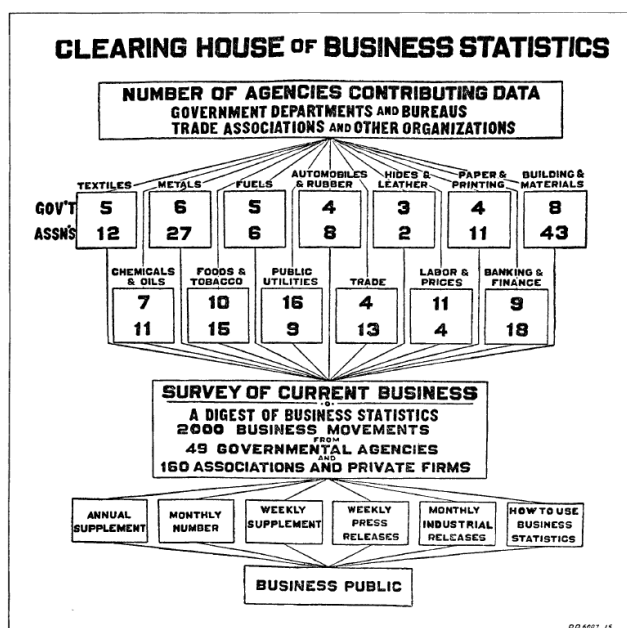
In response to these two sets of recommendations, Hoover directed the Census Bureau to publish the *Survey of Current Business*, with data contributions from two other DOC agencies—the Bureau of Foreign and Domestic Commerce (BFDC) and the Bureau of Standards. Hoover

believed that “[P]rompt and comprehensive monthly publication of fundamental data . . . would contribute greatly” to macroeconomic stability; businesses would use reliable data “to prevent overexpansion and overspeculation . . .”<sup>5</sup> The *Survey*’s first issue was published in July 1921.

The *Survey* served as Hoover’s tool for macroeconomic stabilization through his 8 years as Commerce Secretary and 4 years as President of the United States. In commemoration of the *Survey*’s 100th issue, (published in December 1929), the editor optimistically wrote:

“While it may be too early to say that the utilization of business data has entirely eliminated the business cycle, there is agreement to-day among business leaders everywhere that the wider use of facts will mitigate in a large degree many of the disastrous effects of the one-time recurrent business cycle.”

The *Survey*’s July 1931 issue provided the graphic illustration below of the periodical’s role as the nation’s “Clearing House of Business Statistics,” one that offered “2000 business movements” from data from 49 federal agencies and 160 industry associations and private firms.



History suggests the *Survey* did not prove to be as effective a macroeconomic stabilization tool as Hoover had hoped. At the same time, the *Survey*’s existence—particularly its staff’s access to secondary data from over 200 sources—led U.S. Senator Robert La Follette to sponsor a resolution instructing the BFDC to prepare estimates of national income for 1929–1931 so the extent of the economic calamity could be measured. La Follette designated the BFDC because the agency had taken over publication of the *Survey*, and management of the underlying data clearinghouse, from the Census Bureau as of the July 1930 issue.

Created by Congress in 1912, the BFDC sought to “foster, promote, and develop” the various industries of the United States in foreign and domestic markets, particularly through the use of information and statistics. In the 1920s, the BFDC Division of Statistical Research prepared a series of statistical references, including the *U.S. Statistical Abstract* and the *Commerce Yearbook*, a lengthy annual data-driven review of the nation’s economic activity.<sup>6</sup>

The *Survey*, its underlying database, and its staff were transferred to BFDC from the Census Bureau in 1930 because the *Survey* and the *Commerce Yearbook* were seen as complements.<sup>7</sup> Once the *Survey* was in-house, the BFDC Division of Statistical Research added economic research to its portfolio, including the study of business cycles. The following box describes the Division's new research efforts and improvements to the *Survey*.

### Annual Report to the Secretary of Commerce: Division of Statistical Research, Bureau of Foreign and Domestic Commerce

"Demands upon the statistical research division were greatly increased during the past year [1931], the business depression engendering a generally greater and more searching inquiry and analysis of the rapidly changing conditions. Practically all of the work formerly performed by the statistical assistant to the Secretary is now being handled by this division. These increased services necessitated some reorganization and some important additions to the staff. A detailed and continuing study of business cycles was carried on, with special emphasis on current developments. Regular weekly surveys of employment and of business conditions, domestic and foreign, were established and maintained.

The *Survey of Current Business* was transferred from the Bureau of the Census at the beginning of the fiscal year. During the year intensive study has been given to the editorial make-up and statistical contents of the publication, as well as to a more timely printing schedule. Under the new plan adopted the *Survey* now consists of a monthly of 56 pages, containing approximately 2,000 alphabetically arranged series covering a 13-month period, which provide the basic statistics for the 25 pages of charts and interpretive text; an annual supplement, the 1931 issue of which gives monthly data on the same 2,000 series running back seven years; and a weekly supplement giving the weekly and monthly data made available during the week just closed."<sup>1</sup>

1. From page 122 of the *Nineteenth Annual Report of the Secretary of Commerce: 1931*.

Reflecting an expanded mission, staff, and data capabilities, in 1932, the BFDC changed the name of the Division of Statistical Research to the Division of Economic Research. (In essence, this new division was the first incarnation of today's BEA.<sup>8</sup>)

Senator La Follette advocated greatly increased federal spending to combat the Great Depression and sought better economic data to guide that spending. His resolution specifically designated the BFDC in expectation that the national income study would be conducted by its new Division of Economic Research. La Follette's resolution was approved without dissent on June 13, 1932.

Although the BFDC's Division of Economic Research had access to data needed for the national income study, its staff lacked the necessary expertise in economic analysis. The BFDC sought help from NBER, which had the desired capability and experience in national income estimation.<sup>9</sup> NBER detailed Simon Kuznets to the BFDC to head the study, starting January 1933. Kuznets was aided by BFDC economists Robert Martin and Robert Nathan (a former Kuznets student).

Making pathbreaking use of the several hundred secondary data sources at hand, Kuznets and his team submitted *National Income, 1929-32* to the Senate (with data for an additional year) on January 4, 1934. The report's main body includes description and analysis of 203 tables. Table data sources indicate substantial reliance on data from the *Survey* and its federal and trade association sources.

After the report's publication, Nathan became chief of a new National Income Section in the BFDC Division of Economic Research.<sup>10</sup> Kuznets organized and chaired the first Conference on National Income and Wealth (now the Conference on Research on Income and Wealth). Going forward, Kuznets, Nathan, and their colleagues at NBER, the BFDC, and research universities catalyzed a stream of innovations in national economic accounting and analysis.

Although Hoover's aim of realizing macroeconomic stability through the *Survey's* market-perfecting data was not achieved, his approach to rely on massive secondary data collection made possible the national income study, the field of national economic accounting, and the capacities and work of BEA today.<sup>11</sup>

## The Emergence of the *Survey* as a Macroeconomic Policy Tool in the 1920s

The establishment of the Department of Commerce and Labor, and the successor Department of Commerce, catalyzed peace- and wartime cooperation between the federal government and the nation's business community in several realms of economic policy, including the gathering and dissemination of statistical information.

Congress created a new Department of Commerce and Labor in 1903 "to foster, promote, and develop the foreign and domestic commerce, the mining, manufacturing, shipping, and fishery industries, the labor interests, and the transportation facilities of the United States." Congress gave the Department jurisdiction over existing agencies working with or on behalf of business—including the Bureau of Standards, the Census Bureau, and the Treasury Department's Bureau of Statistics (which published the *U.S. Statistical Abstract* and foreign trade data). The Department also included a new Bureau of Manufactures to promote industrial development through information gathering and dissemination.

In 1912, at the end of the Taft Administration, the Department of Commerce and Labor initiated a new model of business-government collaboration that the federal government would rely on for 20 years—working closely with industry trade associations (and facilitating their creation as needed) to promote economic development, primarily through joint information sharing and decisionmaking.

The Department's first major business-government collaboration was the creation of the U.S. Chamber of Commerce. In April 1912, the Department's Bureau of Manufactures hosted a National Commercial Conference of 700 delegates from 392 commercial associations to organize a new national chamber to link the nation's manufacturers with export opportunities generated by the Bureau's worldwide network of commercial attachés. In addition, Bureau staff believed a new chamber could collaborate with the federal government across multiple other economic development activities.

After the conference, Congress established the BFDC by combining the Bureau of Manufactures and the Bureau of Statistics. A year later, Congress created the Department of Commerce and the Department of Labor out of the Department of Commerce and Labor.

During the First World War, the business-government cooperative model was further developed through the War Industries Board, created "to assure an uninterrupted and adequate supply of materials for . . . military needs . . . , to provide the essential civilian needs of the country, and to maintain, so far as possible, general business and industrial stability."<sup>12</sup>

Closely working with the U.S. Chamber, the Board created 57 commodity sections, each with an administrative chief from private industry and representatives from military supply units concerned with a particular commodity.<sup>13</sup> Each section had the authority to manage production, distribution, prices, and labor, including the authority to take control of factories and supplies.<sup>14</sup>

President Wilson's Central Bureau of Planning and Statistics then created a Statistical Clearing House to facilitate the work of the War Industries Board's commodities sections and two other industrial planning entities (the War Trade Board and the U.S. Shipping Board) as well as to give the President a monthly "conspectus" of government war activities.

"[T]he Statistical Clearing House . . . maintains and keeps available for instant reference a card file showing just what statistics have been gathered by the statistical agencies of the Government and where they may be had. . . . [I]t has built up a practically complete record of commodity, shipping, labor and railroad statistics . . ."15

The perceived success of the Board and the Statistical Clearing House motivated proposals to create peacetime analogues for the purposes of national economic and industrial development. Secretary Hoover very much agreed with this perspective. On taking office, he quickly initiated three new efforts involving close collaboration between the Commerce Department and industry trade associations. The first was the *Survey*, housed at the Census Bureau. Second, following the War Industries Board model, the BFDC established 15 commodity divisions to promote industrial growth. Third, Hoover created a Division of Simplified Practice in the Bureau of Standards to eliminate waste in individual industries.

Across these efforts, if a trade association did not exist in an industry of interest, BFDC or Bureau of Standards staff would work with corporate representatives, and often the U.S. Chamber, to create one. Between 1919 and 1929, the number of industry trade associations in the United States grew from about 700 to over 2,000.<sup>16</sup>

## **Edwin Gay and Wesley Mitchell build the Statistical Clearing House**

As noted earlier, Secretary Hoover created the *Survey* on the recommendation of his Joint Census Advisory Committee. Members Edwin F. Gay and Wesley C. Mitchell were instrumental in crafting this recommendation due to their experience in organizing the Central Bureau's Statistical Clearing House.

Prior to the war, Gay was the first dean of the Harvard Graduate School of Business Administration and Mitchell was an economics professor at Columbia University. Mitchell had created the most sophisticated database yet seen for the purposes of economic analysis, believing centralized data collection represented the future of macroeconomic management.

"[H]e 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. . . ."17

During the war, Gay took over the planning and statistics units of three economic planning agencies—the U.S. Shipping Board, the War Trade Board, and the War Industries Board—"In the belief that by bringing shipping, trade, and industrial figures under one controller a more

efficient job could be done on all three.” Gay brought in Mitchell to manage price data in each agency.<sup>18</sup>

In June 1918, President Wilson made Gay head of the new Central Bureau of Planning and Statistics, charged with creating a monthly “conspectus of all the present war activities of the government” to enable the “periodical checking up of actual operations and results.” The Central Bureau also coordinated and facilitated the activities of the Gay-led planning and statistical divisions at the three wartime resource agencies.<sup>19</sup> After Mitchell relocated his prices data operation to the Central Bureau, Gay and Mitchell created the Statistical Clearing House to help the Central Bureau fulfill its mission.<sup>20</sup>

Businessmen, federal administrators, economists, and statisticians highly valued the Central Bureau as an accessible source of a comprehensive set of current industry data. Consequently, they asked Wilson to make the Central Bureau a permanent agency in the Commerce Department.<sup>21</sup> Despite these requests, the Central Bureau was closed in June 1919.<sup>22</sup>

On Hoover’s first day in office in 1921, he received a confidential letter from the Joint Census Advisory Committee identifying significant problems in the Census Bureau. Joint Committee members included Gay, Mitchell, and three other former Central Bureau staff. At Hoover’s request, the Joint Committee agreed “to serve as an advisory committee on statistics in the Department.”<sup>23</sup>

In June 1921, seeking a successor to the Central Bureau’s Statistical Clearing House, the Joint Committee strongly recommended the regular publication of current industry statistics to facilitate macroeconomic stability.<sup>24</sup> On receiving the Joint Committee’s recommendation (and a similar one from the Waste Committee), Hoover ordered the Census Bureau’s creation of the *Survey*.<sup>25</sup>

## The Utilization of the *Survey* for National Economic Accounting in the 1930s

In addition to serving as Central Bureau leads and Joint Committee members, Gay and Mitchell were principal architects and cofounders of NBER. In 1920, Gay became NBER’s first president and Mitchell its first research director. From 1924 to 1933, Gay and Mitchell served as NBER co-research directors. In these roles, they enabled the *Survey*’s transformation from a macroeconomic policy tool addressing information market failure to the foundation of the national economic accounts.

Gay and Mitchell first conceived of an NBER-type organization in 1914. At the Rockefeller Foundation’s invitation, Gay chaired a committee to explore the creation of an independent, noneducational economic research institute. The committee recommended establishing such an institute with Mitchell as the head researcher and data organizer.<sup>26</sup> Due to the advent of war, the recommendation was not acted on.

In 1916, Gay, Mitchell, and other economists organized the Committee on the Distribution of Income to guide the creation of an independent economic research institute like the one Gay’s committee had proposed 2 years earlier. This effort was halted by entry of the United States into the war.

In January 1920, the participants in the two prior efforts, including Gay and Mitchell, realized their vision by incorporating NBER. Failure to convince President Wilson to maintain a peacetime Central Bureau in the Commerce Department gave them an additional reason to create the new organization.<sup>27</sup>

NBER's first efforts were to study the size, distribution, and industrial composition of national income and to substantially enhance price indices.<sup>28</sup>

“National income was a singularly appropriate subject for the Bureau's first research program. The measurements put the state of the nation's economic well-being into quantitative form, if only to a first approximation. Modern economic life is organized very largely on the basis of making and spending money incomes, so analysis of the sources of economic change should start with the measurement of the national income and its principal components as they changed over time. The resulting “national accounts,” in today's terms, would “set out the framework of a moving economic system.” And this framework could be expanded and fleshed out if the Bureau succeeded in establishing itself and if the necessary funds, data, and personnel became available. The framework could then be put to use in analytical studies of the many questions that troubled people—questions about the magnitude, character, process, and consequences of aggregate change in and distribution of the nation's income.”<sup>29</sup>

During the 1920s, Hoover and NBER (through Gay and Mitchell) collaboratively pursued three efforts that, while intended to support Hoover's vision of the “associative state,” created the foundation for national economic accounting in the 1930s.<sup>30</sup>

First, Hoover received approval from President Harding to convene and chair the President's Conference on Unemployment, which met in September 1921. Hoover persuaded Harding to recognize the Joint Committee as the conference's economic advisory group and expanded it, with Gay's advice, to 20 members.<sup>31</sup> The two main results of the conference were to agree with “professional economists that the collection and analysis of statistical information about the economy would provide tools for controlling the business cycle” and to create “a Business Cycles Committee to undertake an in-depth study of the whole issue.” NBER, “which has already begun examining the problem under the leadership of Edwin Gay and Wesley Mitchell, . . . agreed to provide the technical expertise for Hoover's committee.”<sup>32</sup>

The Business Cycles Committee went to work in February 1922. Funded by the Carnegie Foundation, the NBER experts presented their findings to the committee in December. The committee published the report as a book, *Business Cycles and Unemployment*, in 1923.<sup>33</sup>

Second, in January 1928, Hoover created the Committee on Recent Economic Changes of the President's Conference on Unemployment to continue and extend the work of the previous Business Cycle Committee. “[T]o reactivate the funding and research legs that had supported the business cycle committee's inquiries,” Hoover reengaged NBER.<sup>34</sup> Led by Gay and Mitchell, an NBER team (including Simon Kuznets) carried out the research, funded by the Rockefeller and Carnegie foundations. The co-research directors sought to understand the factors that determined the business cycle and believed that a collaborative effort with Hoover and the committee's business members would enable effective implementation of their findings.<sup>35</sup> *Recent*



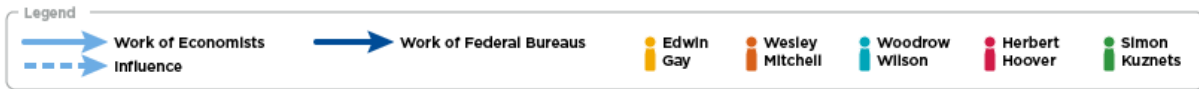
*Economic Changes in the United States*, covering the years 1922–1929, was published in May 1929. The committee emphasized the importance of “a technique of balance” based on economic statistics and analysis.<sup>36</sup>

Third, in December 1929, President Hoover organized a President’s Research Committee on Recent Social Trends, chaired by Mitchell and funded by the Rockefeller Foundation. While NBER researchers prepared papers, the Social Science Research Council oversaw report preparation. Framing a decade’s efforts, Hoover wrote the introduction a few weeks before the November 1932 election.

“This study is the latest and most comprehensive of a series, some of them governmental and others privately sponsored, beginning in 1921 with the report on “Waste in Industry” under my chairmanship. It should serve to help all of us to see where social stresses are occurring and where major efforts should be undertaken to deal with them constructively.”<sup>37</sup>

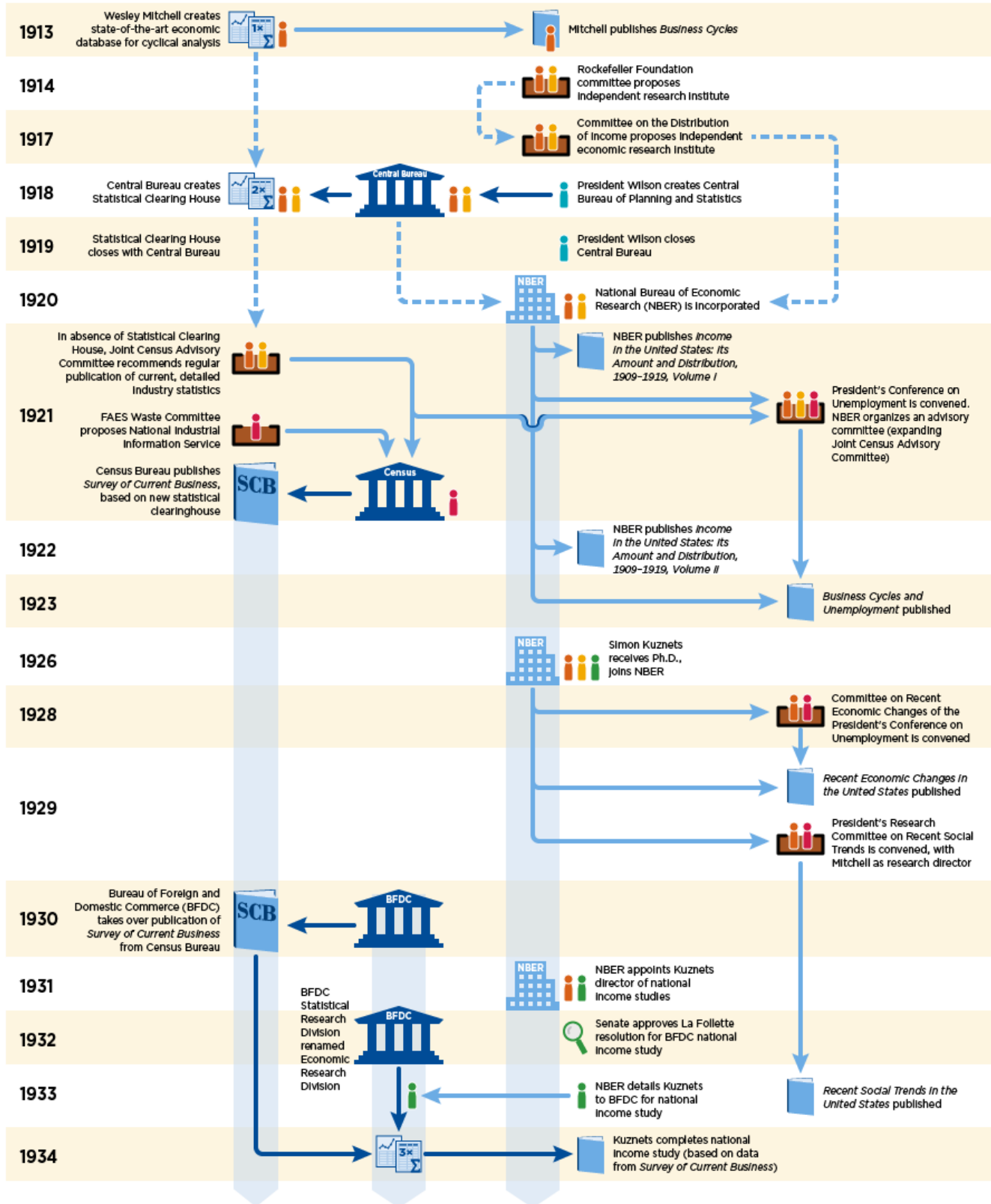
*Recent Social Trends in the United States* was published in January 1933. Kuznets started the national income study in the same month. Kuznets came to this role because of years-long mentorship by Mitchell. Mitchell was Kuznets’ dissertation adviser; hired Kuznets to work at NBER in 1926; supervised Kuznets’ contributions to the 1929 Hoover-sponsored *Recent Economic Changes in the United States*; appointed Kuznets as NBER director of national income studies in 1931; and referred Kuznets to the BFDC Division of Economic Research to conduct the study.

# The Evolution of the *Survey of Current Business* as Statistical Clearinghouse and Basis for National Economic Accounting



## Statistical Clearinghouse

## Basis for the National Economic Accounting



## Conclusion

The *Survey*, then, is both an historical artifact of an older framework for macroeconomic stabilization and the bridge from that past to a vibrant present. The *Survey* was created as a key means of business-government cooperation. In gathering secondary data from a multitude of federal and trade association sources, it made the national economic accounts, and today's BEA, possible.

While Simon Kuznets is rightly seen as the father of the national economic accounts, his work was enabled through the efforts of three other significant actors in creating the *Survey* and in developing economic accounting methods—Edwin Gay, Wesley Mitchell, and Herbert Hoover.

Gay and Mitchell demonstrated the value of a Statistical Clearing House, were early innovators in national economic accounting, and created NBER to advance that work. Hoover had a vision of the role of information, trade associations, and business-government cooperation in national economic vitality. Between 1921 and 1933, Gay, Mitchell, and their NBER colleagues worked closely with Hoover in multiple focused efforts to refine and fulfill that vision. The front end of those efforts was the 1921 creation of the *Survey of Current Business*, as directed by Hoover on the recommendation of Gay, Mitchell, and former Central Bureau colleagues. On the back end was the repurposing of the *Survey's* database in 1933 for economic accounting, with Mitchell sending Kuznets over to the BFDC. And in between were three Hoover-sponsored, NBER-led studies that advanced economic accounting techniques to a level sufficient for Kuznets to do his groundbreaking work.

1. Evan B. Metcalf, "Secretary Hoover and the Emergence of Macroeconomic Management," *Business History Review* 49 (Spring 1975).
2. Ellis W. Hawley, *The Great War and the Search for a Modern Order: A History of the American People and Their Institutions, 1917–1933, Second Edition* (New York: St. Martin's Press, 1992).
3. Committee on Elimination of Waste in Industry of the Federated American Engineering Societies (FAES), *Waste in Industry* (Washington, DC: FAES, 1921). Hoover served as a member of the committee.
4. See note 2 above.
5. Hoover as quoted in *Waste in Industry*. The periodical's title, *Survey of Current Business*, indicates its initial intended audience of business decisionmakers. "*Survey of Current Business*" carries two connotations—overview of the economy and survey of public and private data sources.
6. The *U.S. Statistical Abstract* was first published in 1878 by the Bureau of Statistics in the U.S. Treasury Department. The *Commerce Yearbook* was published for the years 1922–1932, that is, for each of the full calendar years of Hoover's tenure as secretary and President. The first edition's cover letter from Hoover and BFDC Director Julius Klein indicates the *Yearbook* is "an authoritative review of the economic year throughout the world, prepared from the point of view of American industry and commerce."
7. The BFDC and the Census Bureau swapped significant segments of their portfolios between 1930 and 1941. In 1930, the BFDC took responsibility for the *Survey*. In 1938, the Census Bureau started publishing the *U.S. Statistical Abstract*. In 1941, the BFDC Division of Foreign Trade Statistics moved over to the Census Bureau.
8. In 1945, the Division of Economic Research became the Office of Business Economics (OBE). In 1953, OBE became independent of the BFDC. In 1972, OBE was renamed the Bureau of Economic Analysis.
9. Bureau of Economic Analysis, "Simon Kuznets and the Early Development of National Income and Product Estimates," *Survey of Current Business* 65 (July 1985): 27–28.
10. Robert William Fogel, Enid M. Fogel, Mark Guglielmo, and Nathaniel Grotte, "The Emergence of National Income Accounting as a Tool of Economic Policy," in *Political Arithmetic: Simon Kuznets and the Empirical Tradition in Economics* (Chicago: University of Chicago Press, for the National Bureau of Economic Research, 2013): 49–64.
11. At the same time, embodiment of Hoover's vision did not die for another 60 years, although expectations for its impact on macroeconomic stability dropped very substantially. Until February 1994, each issue of the *Survey* included a dedicated "Current Business Statistics" appendix with tables of detailed economy-wide and industry-specific statistics printed on blue paper (to distinguish it from the main text, which was printed on white paper) with its own numbering system that started with the letter "S." Publication of "Current Business Statistics" was discontinued due to a "reprogramming of resources." The author thanks Raymond J. Mataloni Jr. for this information.
12. Leo Wolman, "The Statistical Work of the War Industries Board," *Journal of the American Statistical Association* 16 (March 1919): 248–260.
13. Robert D. Cuff, "The Structural Realities of Industrial Planning," in *The War Industries Board: Business-Government Relations During World War I* (Baltimore: Johns Hopkins University Press, 1973).
14. Merle Fainsod, Lincoln Gordon, and Joseph C. Palamountain Jr., *Government and the American Economy, Third Edition* (New York: W.W. Norton & Company, 1959): 826–827.
15. Z.L. Potter, "The Central Bureau of Planning and Statistics," *Journal of the American Statistical Association* 16 (March 1919).
16. Ellis W. Hawley, "Herbert Hoover, the Commerce Secretariat, and the Vision of an 'Associative State,' 1921–1928," *The Journal of American History* 61 (June 1974).
17. Robert William Fogel, Enid M. Fogel, Mark Guglielmo, and Nathaniel Grotte, "The Early History of NBER," in *Political Arithmetic: Simon Kuznets and the Empirical Tradition in Economics* (Chicago: University of Chicago Press, for the National Bureau of Economic Research, 2013).
18. Herbert Heaton, *A Scholar in Action: Edwin F. Gay* (Cambridge, MA: Harvard University Press, 1952) 110–116.
19. See note 18 above and Robert D. Cuff, "Creating Control Systems: Edwin F. Gay and the Central Bureau of Planning and Statistics, 1917–1919," *Business History Review* 63 (Autumn 1989): 588–613. Because of the "secret and confidential nature of the data to be gathered and disseminated, . . . [t]he Bureau operated as an independent agency directly under the President, but reported through Mr. Baruch of the War Industries Board." The National Archives, *Preliminary Inventory of the Records of the Central Bureau of Planning and Statistics, Record Group 51* (Washington, DC: National Archives, 1957) 1, 7–10.
20. According to Heaton in *A Scholar in Action: Edwin F. Gay*, page 128, by the end of the war, Gay managed over 1,000 people. As a coordinating agency, the Central Bureau was relatively small, with 60 staff.
21. See note 20 above.
22. However, the Central Bureau's "conspectus" helped lead Congress to pass the Budget and Accounting Act of 1921, which created the Bureau of the Budget in the Treasury Department. That Bureau became the White House Office of Management and Budget (OMB) in 1970.
23. From page 190 of *A Scholar in Action: Edwin F. Gay*.
24. "Wesley C. Mitchell and Edwin F. Gay . . . held views similar to Hoover's on the importance of statistical information in the control of the business cycle, and they were dismayed at the wholesale dismantling of the wartime statistical agencies in which they had served." From page 68 of "Secretary Hoover and the Emergence of Macroeconomic Management."

25. See note 24 above. Separately, Hoover engaged Gay to evaluate and suggest improvements in the Department's economic indices and monthly summary of business conditions. From page 191 of *A Scholar in Action: Edwin F. Gay*.
26. See *A Scholar in Action: Edwin F. Gay* in note 25 above.
27. Guy Alchon, *The Invisible Hand of Planning: Capitalism, Social Science, and the State in the 1920s* (Princeton, NJ: Princeton University Press, 1985): 48.
28. National Bureau of Economic Research (NBER), *Income in the United States: Its Amount and Distribution, 1909–1919, Volume I* (NBER, 1921) and *Volume II* (NBER, 1922).
29. Solomon Fabricant, *Toward a Firmer Basis of Economic Policy: The Founding of the National Bureau of Economic Research* (National Bureau of Economic Research, 1984): 11.
30. The term “associative state” is first used by Hawley in “Herbert Hoover, the Commerce Secretariat, and the Vision of an ‘Associative State,’ 1921–1928.”
31. See page 190 of *A Scholar in Action: Edwin F. Gay*.
32. Kendrick A. Clements, *The Life of Herbert Hoover: Imperfect Visionary, 1918–1928* (Palgrave Macmillan, 2010).
33. Fogel and others in Chapter 2 of *Political Arithmetic*. In its work for the President's Conference on Unemployment, NBER recognized that statistically reliable estimates of unemployment were not available. In response, NBER economist Willford King created quarterly estimates of unemployment, published as *Employment Hours and Earnings in Prosperity and Depression, United States, 1920–1922* (1923).
34. From page 135 of *The Invisible Hand of Planning: Capitalism, Social Science, and the State in the 1920s*.
35. From page 136 of *The Invisible Hand of Planning: Capitalism, Social Science, and the State in the 1920s*.
36. From page xxii of the *Report of the Committee on Recent Economic Changes of the President's Conference on Unemployment, 1929*.
37. From page v of *Recent Social Trends in the United States: Report of the President's Research Committee on Social Trends, 1933*.