

The SSRC's Committee on Economic Stability and the Consolidation of Large-Scale Macroeconometric Modeling in Postwar United States

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Abstract

This report presents ongoing research on the history of the Committee on Economic Stability of the Social Science Research Council (1959-1995), which played a major role in the consolidation of large-scale macroeconometric modeling in postwar United States, both inside and outside academia. A key characteristic of the Committee's projects was their scale, which largely surpassed previous model-building work. This feature provides interesting insights into the relevance of the Committee's work in shaping macroeconomics in the postwar period. The Committee's records offer a most valuable source for reevaluating the history of macroeconomics, since much of applied economics and economics outside of academia has been neglected in the historiography of economics.

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The construction of macroeconometric models—systems of equations describing an economy as a whole—emerged as a practice in Europe during the interwar years. The Dutch Jan Tinbergen's work for the League of Nations, which produced the first model of the United States' economy, was a major steppingstone. Macroeconometric modeling continued to develop in Europe during the postwar period, most notably at the Netherlands' Central Planning Bureau and other similar institutions. In the US, the Cowles Commission provided fundamental support for macroeconometric modeling during the early postwar. In particular, Trygve Haavelmo's *The Probability Approach in Econometrics* (1944) laid down the basis for the incorporation of probability and statistical inference in econometric modeling, and Lawrence Klein's modeling work kickstarted the practice in the US. While the Cowles Commission lost interest in this line of research in the 1950s, Klein continued to develop increasingly larger models of the US economy. At the end of 1959, he was invited to join the Committee on Economic Stability of the Social Science Research Council (SSRC), which had just been established in September of the same year.¹ As the pioneer of macroeconometric modeling in the US, Klein played a leading role in the Committee's work, but he was far from being alone. Several other influential macroeconomists—including James Duesenberry, Franco Modigliani, Albert Ando, and Otto Eckstein—were members of the Committee on Economic Stability and helped carry out its various projects. The importance of the Committee is demonstrated not only in the stature of some of its members, but mainly in the importance of the space that it helped consolidate for macroeconometric modeling as a practice—both inside and outside academia. This short note presents an overview of the Committee's work and highlights some important characteristics for the study of the evolution of postwar macroeconomics.

An Overview of the Work of the Committee on Economic Stability

The founding of the Committee was motivated by the dissatisfaction felt by some economists associated with the SSRC regarding contemporary theoretical models of economic fluctuations. They believed that the models did not capture important characteristics of the US economy.² The Committee's first major project, the construction of a macroeconometric model of the US economy, was meant to provide a more adequate description of the US economy and serve as a tool to forecast economic variables and study the effects of economic policy. A group of more than twenty researchers, led by Duesenberry (Harvard) and Klein (U. of Pennsylvania), worked on the model from 1961 to 1963. At that point, the first version of the model was handed over to the Brookings Institution for further development and maintenance.³ The Brookings Quarterly Model (1963-1972), as it came to be known, was a milestone in the development of large-scale macroeconometric models, containing hundreds of equations. Yet even in 1963, when the model contained around 100 equations, the Committee on Economic Stability had already exceeded, by an order of magnitude, any other model built before. Furthermore, and perhaps more importantly at this stage than the actual model, the Committee's approach of combining individual research with weeks-long summer institutes laid out the foundation for the organization of future work on similar projects. Roughly around the same time, in August 1963, the Committee organized a conference on "quantitative policy analysis." Bert Hickman (Brookings Institution) and Karl Fox (U. of Iowa)—both Committee members— together with Erik Thorbecke (U. of Iowa) and Charles Holt (U. of Wisconsin-Madison) were in charge of the organization. The conference's goal was to acquaint US economists—both in academia and in policy agencies—with the quantitative tools used for economic policy analysis in Japan, France, and the Netherlands, all of which had a longer experience with these tools than the US had. The organizers of the conference hoped that it would be a learning experience for US economists and that it would convince them of the potential of tools like the model that the Committee had handed over to the Brookings Institution. As

such, the conference supplemented the interest that the model had already provoked among some government officials that participated in its construction.⁴

The strongest example of collaboration between the Committee on Economic Stability and a government agency was the development of a macroeconomic model for the Board of Governors of the Federal Reserve System. From 1966 to 1970, economists from the Board of Governors, led by Frank de Leuw (who had been responsible for the construction of the financial sector of the Committee's model), and several other academic economists led by Modigliani (MIT) and Ando (U. of Pennsylvania) worked together to build the Board's first macroeconomic model: the Federal Reserve Board-MIT-U. of Pennsylvania model, most commonly known as the FMP model. Compared to the Committee's model that was then being developed in parallel by the Brookings Institution, the FMP model had a considerably more disaggregated representation of the monetary side of the US economy, and it helped usher in a greater role for econometric analysis and forecasting at the Board. The project and the Board's funding, which had been channeled through the SSRC, ended in 1970. The model was then handed over to Wharton for further management and distribution—and the name the MIT-Penn-SSRC (MPS) name was adopted.⁵ The FMP/MPS model project was part of a larger interest of several Committee members on monetary economics, crystalized in the creation in 1965 of the Subcommittee on the Monetary Mechanism. The Subcommittee—which perdured until 1985 and was chaired by Ando and Hickman (then at Stanford) during most of this period—included as members some of the leading academic economists in the field of monetary economics (e.g., U. of Minnesota's John Kareken and MIT's Rudiger Dornbusch) as well as Federal Reserve officials. Through its meetings, where research by members and outsiders was presented, the Subcommittee provided an important space for discussion of the latest development in monetary and macroeconomics. It was also an important connection point between academics and Federal Reserve officials.⁶

The Committee's last and longest-lasting project was the LINK project. Starting in 1969—after a planning conference the preceding year and with Klein as coordinator—project LINK aimed at constructing a model of the world economy by linking together national macroeconomic models. Such a world model

would allow researchers to study international economic relationships and, in particular, the transmission of stabilizing and destabilizing forces among countries. The project initially included only a few countries, but it quickly incorporated additional ones. By the late 1970s, it had more than 20, and by the early 90s, it had more than 70, including developing and socialist countries. Its size, in terms of equations (around 16,000 by the mid-1980s), was also unprecedented. Many of the developing and socialist countries involved did not have existing macroeconometric models or the infrastructure to produce them. So, the LINK project built these models for them and later helped in setting up adequate conditions for their management to be continued locally. In fact, much of the work was done by individual country groups, who only met twice a year to produce a four-year forecast of the world economy. Klein and a small staff at the University of Pennsylvania played a key role in centralizing information and computing the forecast, but much of the work was done locally. In 1990, the project was transferred to the United Nations, where it still remains active, and the University of Toronto took over the coordinating role, once Klein retired from active duty at the University of Pennsylvania.⁷

Big Science in Postwar Macroeconomics

Not unlike contemporary milestones in engineering and the natural sciences, the Committee on Economic Stability's projects involved large teams of researchers to produce large, complex models that offered an unprecedented level of disaggregation and detail of the working of the United States' and the world economy. This level of detail served a purpose, for the large-scale macroeconometric models that the Committee built were tools for economic policy analysis. Continuing with the vision began by Tinbergen in the 1930s, the Committee developed models that offered the possibility of improving economic policy analysis. These models offered a better picture of the functioning of the economy, revealing the causes and magnitude of economic disturbances, and offering the possibility to test the strength and adequacy of various countercyclical policies via model simulations. Not surprisingly, the Committee's work attracted the attention and involved members of various government agencies and

multilateral organizations. Their activities constituted an important strand of postwar macroeconomic work that helped shape how various agencies, from the Federal Reserve to the Congressional Budget Office, thought about economic policy. In academia, this type of large-scale macroeconometric modeling came under heavy criticism in the 1970s, and a decade later it had been essentially erased from academic macroeconomics. On the contrary, outside of academia, both in government agencies and in the relatively young economic forecasting industry, large-scale macroeconometric models continued to exist and evolve. It will take a closer examination of the records of the Committee's work and of other similar models to fully understand what their perceived virtues were and why they managed to thrive outside academia. The level detail offered by this type of models, which is valuable to both policymakers and business firms, is, however, likely to be a key reason of these models' success in central banks and economics forecasting firms.

Another fundamental aspect related to the scale of the Committee on Economic Stability's projects was the infrastructure needed to carry them out. Here the Committee certainly benefited from the developments in the computer industry, but it also helped push the frontier of what was possible at the time in a couple specific directions. First, the need to solve and simulate such large models drove the creation of specialized econometric software, which would itself develop into a thriving industry afterwards. Second, the vast amounts of data needed to run the model also contributed to the development of database software and collaboration protocols for working with large groups of geographically dispersed researchers. The material dimension of the Committee's projects is thus central to fully understanding its reach and influence in the macroeconomics profession. The Committee helped domesticate the computer and bring it into macroeconomic practice, thus contributing to changing the skills that a competent macroeconomists should have—which would begin to include programming and the use of statistical software.⁸ In addition, the infrastructure needed to carry out these projects makes it necessary to look at the funding the Committee's activities. Besides the expenses associated with the researchers (fees, hotels, travel) the modeling work carried out by the Committee demanded a large amount of computer work, which represented an important part of their total expenses. The National Science Foundation, to a lesser degree the Ford

Foundation, as well as various government agencies and multilateral institutions, provided the funds for the Committee's projects. It is difficult to say if this work would have taken place regardless of these funds, if other funds would have been found, or if intermediation of the SSRC made a difference in the way the projects were conceived and carried out. Other fields in economics (e.g. game theory and operations research) also received large sums of money, particularly from military agencies, during this time. The Committee on Economic Stability's records will allow us to compare the amount of funds and the relationship with the patrons.⁹ In addition, regarding the intermediation of the SSRC—which supported the work of committees dealing with topics as different as linguistics, Latin America, and Chinese economics—the Committee's records will allow us to assess the relationship between macroeconomics and other social sciences in the postwar period. Recent work on the neglected connections between economics and other social sciences shows that economics was not as insular as it is often presented, and it is thus worth looking into this in the context of an interdisciplinary space such as the SSRC.¹⁰

A Window into Macroeconomics Outside Academia

A key aspect of the Committee on Economic Stability's work already mentioned above was its connection with various government agencies. As much of the historiography of macroeconomics has been concentrated in big names and episodes in the development of macroeconomics inside academia, the history of the Committee offers a valuable window into uncharted land. The Committee built many bridges between academic and government agencies, and constructed models that had a clear practical intention to serve as aides for economic policy analysis. This work offers an opportunity to reassess what have usually been considered to be fundamental transformations or "revolutions" in the recent history of macroeconomics when looked at from academia, thus offering a broader picture of what macroeconomists were actually doing in the postwar.

¹ The Committee on Economic Stability changed its name to “Economic Stability and Growth” in the 1970s and remained active until 1995. The records of the Social Science Research Council available at the Rockefeller Archive Center include the records of the Committee’s activities up to the mid-1980s. On the history of the SSRC, see Kenton W. Worcester, *Social Science Research Council, 1923-1998* (SSRC, 2001) and Elbridge Sibley, *Social Science Research Council: The First Fifty Years* (SSRC, 1974). Basic references for the history of econometrics are Mary Morgan, *The history of econometric ideas* (Cambridge University Press, 1990), Roy Epstein, *A History of Econometrics* (North Holland, 1987), and Duo Qin, *The Formation of Econometrics: A Historical Perspective* (Oxford University Press, 1993). For the history of macroeconometric modeling in particular, see Ronald Bodkin *et al.* (eds.), *A History of Macroeconometric Model-Building* (Edward Elgar, 1991), and Marcel Boumans and Pedro Garcia Duarte, “The History of Macroeconometric Modeling: An Introduction,” *History of Political Economy* 51, no. 3 (2019): 391-400, as well as the accompanying articles in the issue.

² “Conference on economic instability: summary of discussion,” June 17-19, 1959, Folder 801, Box 45, Record Group 1, SSRC Records, Rockefeller Archive Center.

³ Klein to Paul Webbink, May 29, 1963, Folder 1722, Box 151, Record Group 2, SSRC Records, Rockefeller Archive Center.

⁴ Hickman, “Agenda for a conference on ‘Quantitative Planning of Economic Policy’ under the sponsorship of the SSRC Committee on Economic Stability,” May 1, 1963, Folder 811, Box 147, Record Group 1, SSRC Records, Rockefeller Archive Center. On the Committee’s activities during its early years, see Juan Acosta and Erich Pinzón-Fuchs, “Peddling Macroeconometric Modeling and Quantitative Policy Analysis: The Early Years of the SSRC’s Committee on Economic Stability, 1959-1963,” *OEconomia* 9, no.3 (2019):537-558.

⁵ “Minutes of the Committee on Economic Stability,” October 30, 1970, Folder 1723, Box 151, Record Group 2, SSRC Records, Rockefeller Archive Center. Overall, the Committee’s records regarding the construction of the FMP model offer a very complete and detailed window into the history of the project. As such, and just like with the Committee’s model, these records will be of great use for any historian of macroeconomics. However, the FMP project’s records at the Rockefeller Archive Center are particularly valuable because no other records of the project have been found, either at the Board of Governors or in any economist’s personal archive—with the exception of Modigliani’s papers at Duke University’s Rubenstein Library. On the development of the FMP/MPS model see the articles by Rancan, Backhouse and Cherrier, and Acosta and Rubin in the same issue as Boumans and Duarte (*op. cit.*).

⁶ The Advisory Subcommittee on the MPS model (1970-1983) should also be included when considering the ongoing relationship between Fed officials and academic economists. The precise activities of this subcommittee, however, are less clear than the rest of the Committee’s projects. The Committee’s records at the Rockefeller Archive Center include the minutes and papers presented at the meetings related to monetary economics. Further research on them will clarify the work on the MPS model during the 1970s and the network of scholars and institutions associated to the Subcommittee on the Monetary Mechanism.

⁷ The Committee’s records at the Rockefeller Archive Center only contain information about project LINK up to the mid-1980s. On the current activity of project LINK see

<https://www.rotman.utoronto.ca/FacultyAndResearch/ResearchCentres/ProjectLINK.aspx>.

⁸ The Committee's records will help further the existing literature on the role of the computer in economics. See in particular Charles Renfro, "Econometric Software: The First Fifty Years in Perspective," *Journal of Economic & Social Measurement* 29, no. 1–3 (2004): 9–107; and Roger Backhouse and Béatrice Cherrier, "'It's Computers, Stupid!' The Spread of Computers and the Changing Roles of Theoretical and Applied Economics," *History of Political Economy* 49 (Supplement) (2017): 103–26. More generally, the Committee's records will help understand better the material aspects of macroeconomic practice, which have largely been neglected in the historiography of economics. See for example Michel De Vroey, *A History of Macroeconomics from Keynes to Lucas and Beyond* (Cambridge University Press, 2016), and Brian Snowdon and Howard Vane, *Modern Macroeconomics: Its Origins, Development and Current State* (Edward Elgar, 2005).

⁹ On the importance of military agencies' funding in economics see, in particular, Philip Mirowski, *Machine dreams: How Economics Becomes a Cyborg Science* (Cambridge University Press, 2002). The SSRC's minutes and annual reports will allow the reconstruction of the Committee's finances up to the mid-1980s. See Boxes 361-365, Record Group 1, SSRC Records, Rockefeller Archive Center.

¹⁰ See Roger Backhouse and Philippe Fontaine (eds.), *The History of the Social Sciences since 1945* (Cambridge University Press, 2012).