Volume Title: Money, History, and International Finance: Essays in Honor of Anna J. Schwartz

Volume Author/Editor: Michael D. Bordo, editor

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-06593-6

Volume URL: http://www.nber.org/books/bord89-1

Conference Date: October 6, 1987

Publication Date: 1989

Chapter Title: Introduction to "Money, History, and International Finance: Essays in Honor of Anna J. Schwartz"

Chapter Author: Michael D. Bordo

Chapter URL: http://www.nber.org/chapters/c6732

Chapter pages in book: (p. 1 - 12)

Introduction

Michael D. Bordo

Anna Jacobson Schwartz began her career over fifty years ago as an economic historian and ever since has continued her interest in historical issues. Over the past close to four decades, she has been closely involved in research on the role of the quantity of money in economy. This focus on monetary issues has given rise to the collection of monetary statistics, the study of both recent and historical monetary developments in the United States, the United Kingdom, and other countries, and the study of international monetary relations.

This introduction begins with a brief biographical sketch, followed by a short summary of the salient themes in Anna Schwartz's research. Then, the main themes from this volume are related to Anna Schwartz's writings. And finally, there is a brief conclusion.

Biography

Anna Schwartz was born 11 November 1915 in New York City. She received her B.A. from Barnard College in 1934, an M.A. from Columbia in 1936, and a Ph.D from Columbia in 1964. She is married with four grown children and resides with her husband, Isaac, in New York City.

Most of Anna's career has been spent in active research. After a year at the U.S. Department of Agriculture in 1936, she spent five years at Columbia University's Social Science Research Council collaborating with A. D. Gayer and W. W. Rostow in a study of fluctuations in the British economy during 1790–1850. She joined the National Bureau of Economic Research in 1941 and has remained at the Bureau ever since. She was appointed Emerita Research Associate of the NBER in 1985.

In 1981–82 Anna served as staff director of the U.S. Gold Commission and was responsible for writing the Gold Commission Report.

Anna served as instructor at Brooklyn College in 1952 and Baruch College 1959–60, and as Adjunct Professor of Economics at the City University of New York, Graduate Division at Hunter College, 1967–69 and New York University, Graduate School of Arts and Sciences, 1969–70.

She has been a member of the Board of Editors of the *American Economic Review*, and is currently on the board of the *Journal of Money, Credit, and Banking* and *Journal of Monetary Economics*. She has also been a regular participant at the Carnegie Rochester Conference Series on Public Policy and is a charter member of the Shadow Open Market Committee.

Elected to membership in Phi Beta Kappa in 1934, she has served as the reviewer of economics books for *The Key Reporter* since 1984. She was a holder of the Murray Fellowship awarded by Barnard College, 1934–35, was a fellow of the Committee on Research in Economic History, 1945, and is currently Adjunct Professor at the Graduate Center of the City University of New York and Honorary Visiting Professor, City University of London Business School. In 1987–88 Anna Schwartz was president of the Western Economic Association.

Salient Themes in Anna Schwartz's Writings

Three themes dominate Anna's writings: economic statistics, economic history, and monetary economics. In the sphere of monetary economics Anna has written extensively on money, income, and prices; monetary policy; and international issues. (See the appendix for a complete bibliography of her writings.)

Economic History and Economic Statistics

In her early career Anna's research was focused mainly on economic history and statistics. Her collaboration with Gayer and Rostow from 1936 to 1941 produced a massive and important study of cycles and trends in the British economy during the industrial revolution, *The Growth and Fluctuation of the British Economy, 1790–1850* (1953). In the two volumes of Gayer, Rostow, and Schwartz, NBER techniques were adopted to isolate cycles and trends in key time series of economic performance. Historical analysis was then interwoven with descriptive statistics to present an anatomy of the development of the British economy in this important period. A legacy of this project is a share price index (originally constructed by Gayer, Jacobson, and Finkelstein 1940) and a legendary Gayer-Rostow-Schwartz commodity price index. Anna, in an introduction to a second edition of *Growth and Fluctuation* in 1975, noted change in her views on the role of monetary forces in British economic history. Reflecting her later research with Milton Friedman on money and business cycles, she no longer accepted the conclusion in the British Study that money passively accommodated the needs of business. Instead she contended that money played a much more active role.

Since Gayer, Rostow, and Schwartz, Anna has written singly or jointly on many aspects of monetary history. Subjects covered range from the origins of competitive banking in Philadelphia (1987, ch. 1 [1947]), to *A Monetary History of the United States* (with Milton Friedman 1963), to a history of world inflation (1987, ch. 2 [1973]).

After joining the Bureau in 1941, Anna turned her attention to the collection of data. In an important collaboration with Elma Oliver she constructed new monthly estimates of currency held by the public, vault cash, and currency held by the Treasury, over the period 1917–44—data free from the defects of earlier money supply series (Schwartz and Oliver 1947). This research would ultimately serve as the basis for the collection of monetary statistics underlying the NBER's money and business cycle project with Milton Friedman and the publication in 1970 of *Monetary Statistics of the United States*. Later, in a painstakingly careful study Schwartz (1960) constructed new monthly estimates of gross dividends and interest payments by all corporations in the nineteenth century. She offered a comment at a recent NBER Income and Wealth conference on the possible explanation of the need to impute bank income (1989).

Monetary Economics

Money, Income, and Prices

In the 1950s Anna began her collaboration with Milton Friedman on the NBER's highly acclaimed money and business cycles project. This collaboration, over a period of thirty years, resulted in three volumes: *A Monetary History of the United States, 1867–1960* (1963), *Monetary Statistics of the United States* (1970), and *Monetary Trends in the United States and the United Kingdom, 1875–1975,* (1982), in addition to Phillip Cagan's *Determinants and Effects of Changes in the Stock of Money, 1875–1960* (1965), and several journal articles including "Money and Business Cycles" (1987, ch. 2 [with Milton Friedman 1963]).

The theoretical background to the project is the modern quantity theory of money (Friedman 1956). Based on the interaction of a stable demand for money with an independently determined money supply, the key proposition of the modern quantity theory is that a change in the rate of growth of money will produce a corresponding but lagged change in the rate of growth of nominal income. In the short run, changes in money growth lead to changes in real output. In the long run, monetary change will be fully reflected in changes in the price level.

Monetary disturbances affect nominal expenditures via the community's adjustment of its actual to desired holdings of real cash balances. The portfolio adjustment affects a wide range of assets and a wide array of explicit and implicit interest rates connecting assets to permanent income streams, but ultimately impinges on total spending. The timing of changes in nominal spending and their breakdown into changes in real output and in the price level depend on factors such as the speed of adjustment of price and wage expectations and the presence of price and wage rigidities (Friedman 1987).

Long-run historical evidence for the modern quantity theory of money is provided in *A Monetary History,* short-run cyclical evidence in "Money and Business Cycles," and long-run econometric evidence in *Monetary Trends.* This evidence and recent literature following it is surveyed in chapters 1, 2, and 3 below.

Monetary Policy

The overwhelming historical evidence linking economic instability to erratic monetary behavior, in turn a product of discretionary monetary policy, has convinced Anna Schwartz of the importance of stable money and of the case for a constant money growth rule. As a consequence she has devoted considerable attention in the past twenty years to the study of monetary policy in the U.S. and in other countries.

As a charter member, with Karl Brunner, Allan Meltzer, and several others, of the Shadow Open Market Committee, Anna has been engaged since 1971 in an ongoing critical evaluation of the Federal Reserve's policies.

The importance of monetary policy and the case against discretion are examined in studies with Phillip Cagan. One shows that the lags in the effects of monetary policy, based on the simulation of recent econometric models, are long and variable (1987, ch. 7 [1976]); another shows that the interest elasticity of money demand has not changed with the advent in the 1960s and 1970s of money substitutes (1987, ch. 8 [1975]). A study co-authored by myself (1987, ch. 10 [1983]) summarizes the recent debate for and against discretion, and links recent economic instability to erratic monetary policy.

Anna has also examined monetary policy in the U.K., arguing that the Bank of England's focus on credit conditions—the legacy of the 1959 Radcliffe Report—rather than on the quantity of money contributed to its poor postwar performance (1987, ch. 5 [1969]). Similar evidence on central banks' choice of inappropriate policy targets is found for Canada and Japan (1969). In addition a recent case study for Canada (and one in progress on the U.K.) show that the use of interest rates as a monetary control technique has produced excessive monetary variability (Bordo, Choudhri, and Schwartz 1987).

Another question Anna has studied is the role of government in money and banking arrangements—whether both outside and inside money should be provided by the free market and whether a central bank is needed to prevent financial crises (1987, ch. 12 and 11). In a recent paper she has examined post–World War II financial market developments in relation to financial stability and the federal safety net (1988).

International Monetary Issues

In the last ten years Anna has been greatly interested in international monetary issues, especially alternative monetary standards. We collaborated on the organization of a 1982 NBER conference on the classical gold standard. The resulting collection of articles (Bordo and Schwartz 1984) summarizes the current state of knowledge on the operation of the classical gold standard from 1821 to 1931. In a recent paper (1987, ch. 15) Anna describes the historical evolution of the gold standard and assesses its performance in providing price level and output stability. She was also a principal collaborator with Michael Darby, James Lothian, et al. in the NBER's *The International Transmission of Inflation* (1983), writing for it a concise and important assessment of the postwar international monetary system (1987, ch. 14).

When Anna was staff director of the U.S. Gold Commission in 1981–82, the Commission was instructed by Congress to assess and make recommendations on the role of gold in U.S. domestic and international arrangements. The Commission's deliberations culminated in its *Report,* volume 1 of which was written by Anna. In addition to the Commission's recommendations, this volume contains an insightful background to the establishment of the Commission—the legacy of fifteen years of inflation—a thorough review of the role of gold in U.S. monetary history, a detailed examination of the merits and demerits of alternative commodity and fiduciary standards, a critical evaluation of existing gold arrangements in the United States with proposals for change, and an appendix containing valuable data.

The Conference Themes

The papers in this volume are directed at the themes in Anna Schwartz's work in monetary economics just discussed: monetary history; money, income, and prices; and international monetary issues.

Monetary History

Two of the papers focus on monetary history. In one, I assess the role of *A Monetary History* as a progenitor of research on this topic. My paper critically surveys the literature on three major themes in the book: monetary disturbances; the domestic monetary framework and monetary policy; and monetary standards.

Much of the recent historical literature on monetary disturbances has focused on the treatment of the Great Contraction of 1929–33 in *A Monetary History.* The consensus has supported Friedman and Schwartz's view of the primacy of monetary conditions as causal forces in the Great Contraction, although evidence of contemporaneous correlation between money and income has been interpreted as supporting significant feedback from nonmonetary to monetary forces. However, evidence of endogeneity of the money supply or of feedback from real forces to the money supply begs the question of whether the Great Contraction had to happen. As Friedman and Schwartz made clear, the Federal Reserve clearly could have stopped the decline in the money supply and the depression with it.

The literature also supports Friedman and Schwartz on the importance of banking arrangements and monetary policy as the setting for monetary disturbances. Of special interest is recent statistical evidence for a regime change that occurred with the advent of the Fed in 1914, and new explanations for Federal Reserve policy failures in the 1920s and 1930s. One reason given for the Fed's failure to conduct expansionary monetary policy during 1929–31 was that based on its indicators—the level of member bank borrowing and market interest rates—it believed conditions were easy.

On monetary standards, recent work corroborates Friedman and Schwartz's interpretation of the greenback episode, of the effects of the agitation over silver, and of the gold standard as a transmitter of monetary disturbances between countries.

In my survey I conclude that "the unique portrayal of the historical circumstances of monetary disturbances and of alternative arrangements as background conditions serve the monetary economist as the closest thing to a laboratory experiment. The book's example has become an important tool of modern macroeconomic research."

Rockoff in his comment on my paper surveys the contribution of Anna Schwartz's writings on pre-1867 monetary history. The collection of data on monetary aggregates, interest rates, and corporate dividends has provided valuable raw materials for future research. Her work on the chartered banks of Philadelphia, on secular inflation through the ages, and on the case against cost-push inflation in the nineteenth century raises questions for future scholars to tackle.

Capie and Wood examine the contribution of *Growth and Fluctuation* by Gayer, Rostow, and Schwartz, to British economic history. They conclude that "the volume remains unchallenged as a source of carefully constructed data for the years it covers," that "it is the pioneering work in British . . . economic history," and that the volume provides an important link between earlier approaches to the business cycle and current real business cycle theories.

Laidler in his comment focuses on pre–World War II business cycle theory. In not attributing a primary role to monetary forces in the cycle, Gayer, Rostow, and Schwartz had followed prevailing views. Of the leading theorists of the day, only Irving Fisher subscribed to a theory with money as the key causal force of the cycle.

Money, Income and Prices

As discussed earlier, a key theme in Anna Schwartz's writings is the short-run influence of monetary change on real economic activity. *A Monetary History* provided ample evidence that although the relationship between money and income was bidirectional, the dominant channel of influence was from money to business activity. Such evidence was based on historical episodes where the sources of monetary change were recognized as clearly independent of business activity and where monetary change could be associated with a change in income in the same direction. Additional evidence for this finding was based on a number of studies using time-series regressions.

Cagan's paper critically evaluates recent literature which disputes this conclusion. His survey criticizes studies by Kaldor and Tobin in 1970 that made the case for an endogenous money supply, the more recent use of bivariate Granger-causality tests, and most emphatically studies employing vector autoregressions (VAR). Though VAR is a valued technique for dealing with the problems of endogeneity, multicollinearity, and spurious correlation which plagued earlier time-series regression studies, Cagan argues that the results of recent VAR studies, which imply a minor role for monetary shocks in explaining changes in real activity, remain largely spurious. These results reflect both the filtering techniques employed, which remove most of the cyclical movements in money, and the masking of monetary influences by innovations in interest rates, in turn a reflection of monetary policy. In lieu of sole reliance on time-series methods, Cagan advocates the use of the type of historical analysis pioneered by Anna Schwartz.

Rasche in his comment on Cagan argues that sole reliance on historical analysis as an alternative to time-series methods presumes that historical analysis itself is not faulty. Instead, he advocates supplementing VAR analysis, which by itself cannot identify effects from money to income, with judgment based on theory and historical analysis.

Capie and Wood address some of the issues raised in the U.K. following the publication of *Monetary Trends*. Of particular interest were the findings by Friedman and Schwartz which indicated a stable, long-run money demand function in over a century of data; the absence of any influence of money on real activity; and the use of phase-averaged data. Capie and Wood's critique of Hendry and Ericsson's (1983) attack which found in effect that the money demand function had been misspecified, cites recent evidence by Holly and Longbottom (1985) that replicates Friedman and Schwartz's results using Hendry's own techniques. Capie and Wood also defend the use of the phase-averaging technique, which Hendry and Ericsson criticized as well, emphasizing its value in capturing the influence of nondeterministic trends.

Laidler comments on the anomalous result in *Monetary Trends* for phase-averaged data (corroborated by Goodhart 1982 using annual data) that monetary change has no effect on output. Laidler attributes the result to foreign price and exchange rate shocks, which influence prices independent of changes in money supply.

International Issues

In Anna's work in recent years on international monetary issues, three themes are stressed. First, the relationship to the money stock of the international monetary standard. Under flexible exchange rates, the stock of high-powered money is an independent variable determined by the monetary authorities. Under the fixed exchange rate gold standard, high-powered money becomes a dependent variable determined by the balance of payments and, at one remove, by the relationship between domestic and foreign price levels. Second, the comparative performance of alternative monetary regimes—the gold standard versus fiat money regimes—in providing monetary, price level, and real output stability. Third, the international transmission mechanism—whether real and nominal shocks are transmitted differently between countries under fixed and flexible exchange rates—and the role of monetary policy in transmission. Two papers in this volume deal with these issues.

For seven countries, Meltzer and Robinson use a multistate Kalman filter procedure to compare forecast errors (as measures of variability and uncertainty) in the level and rates of change of real output, and the price level for the classical gold standard, Bretton Woods, and the recent fluctuating exchange rate regime. The Kalman filter distinguishes permanent and transitory errors in the levels of series as well as permanent changes in growth rates. Because it is a Bayesian forecasting technique, in generating the forecast it revises the probability weights given to recent and past observations, depending on the past history of shocks. The results show that for most countries the variability of both levels and growth rates of real output were lower in the post–World War II period than under the classical gold standard; in some countries the variability of real output was lower in the recent period of fluctuating exchange rates than under Bretton Woods. Accounting for the changing mix of production between agriculture and manufacturing explains only part of the reduction in variability over time.

Meltzer and Robinson also find price level and inflation variability to be lower in the post–World War II period, especially under fluctuating exchange rates, than under the gold standard in the majority of countries, with the principal exception of the United Kingdom. The latter set of results is contrary to the widely held view that the gold standard fostered long-run price stability and predictability.

Poole in his comment notes that the results on the price level are biased against the gold standard because the period comprises a subperiod of deflation followed by one of inflation. He also suggests that errors in the data in the earlier period would be responsible in part for the greater forecast errors.

To determine whether the advent of fluctuating exchange rates in 1973 led to increased monetary independence, Darby and Lothian compare the behavior of a number of variables (money supply, interest rates, price levels, and real output) under the Bretton Woods system and the subsequent period of floating exchange rates across a sample of twenty OECD countries. The greater variability of, and lower correlation between, long-term measures of nominal variables under floating rather than under fixed rates implies increased monetary independence in the long run. The key finding is that a positive and significant correlation under fixed rates between a measure of desired real cash balances and the nominal money supply is not significantly different from zero under floating rates.

In the short run, there is evidence for the persistence of international linkages under flexible rates in the correlation between the United States and each of the other countries of annual changes in the nominal variables. However, these results can be better explained by the reaction functions of monetary authorities to foreign developments than by the operation of the traditional transmission mechanism.

Stockman in his comment notes that interpretation of the correlation between desired real money balances and money supply is ambiguous if the demand for real balances is correlated across countries. He suggests that cointegration is a better method to reveal common trends in the data than the methods used in this study. Furthermore, evidence that real exchange rates are close to random walks suggests that price movements across countries may be explained by real rather than monetary forces.

Conclusion

The papers in this volume pay tribute to the fine tradition of scholarship Anna Schwartz has followed throughout her career. Her research in economic history, in monetary economics, and international finance have all made an indelible mark on our profession. Each of the papers underscores the legacy of Anna's scholarly endeavors to important fields of research.

Karl Brunner and Milton Friedman paid tribute to Anna Schwartz in remarks presented at the end of the conference. Brunner praised her scholarly attitude, the attention to substantive issues of the real world, the clarity of her views, and the carefulness of her scholarship. Friedman described the remarkable collaboration he has had with her over the years.

The contributors to this volume and many others have learned a great deal from working with Anna Schwartz, from her writings, and above all from her example as a true scholar. We hope this collection is a fitting symbol of our admiration.

References

Bordo, M. D., E. U. Choudhri, and A. J. Schwartz. 1987. The behavior of money stock under interest rate control: Some evidence for Canada. *Journal of Money, Credit and Banking* 19, no. 3 (May):181–97.

Bordo, M. D., and A. J. Schwartz. 1984. *A retrospective on the classical gold standard, 1821–1931*. Chicago: University of Chicago Press.

Cagan, P. 1965. *Determinants and effects of changes in the stock of money, 1875–1960*. New York: Columbia University Press.

Darby, M. R., J. Lothian, et al. 1983. *The international transmission of inflation*. Chicago: University of Chicago Press.

Friedman, M. 1956. *Studies in the quantity theory of money*. Chicago: University of Chicago Press.

———. 1987. Quantity theory of money. *The new Palgrave: A dictionary of economics*. London: Macmillan Press.

Friedman, M., and A. J. Schwartz. 1963. *A monetary history of the United States, 1867–1960*. Princeton: Princeton University Press.

———. 1970. *Monetary statistics of the United States*. New York: Columbia University Press.

———. 1982. *Monetary trends in the United States and the United Kingdom: Their relations to income, prices, and interest rates, 1867–1975*. Chicago: University of Chicago Press.

Gayer, A. D., A. Jacobson, and I. Finkelstein. 1940. British share prices, 1811–1850. *Review of Economics and Statistics* (May):78–93.

Gayer, A. D., W. W. Rostow, and A. J. Schwartz. 1953. *The growth and fluctuation of the British economy, 1790–1850: An historical, statistical, and theoretical study of Britain's economic development.* 2 vols. Oxford: Clarendon Press; 2d ed. 1975, Hertfordshire: Harvester Press.

Goodhart, C. A. E. 1982. Monetary trends in the United States and the United Kingdom: A British review. *Journal of Economic Literature* 20(4):1540–51.

Hendry, D., and N. Ericsson. 1983. Monetary trends in the United Kingdom. Bank of England, Panel of Academic Consultant Paper no. 22.

Holly, S., and A. Longbottom. 1985. Monetary trends in the U.K.: A reappraisal of the demand for money. London Business School EFU Discussion Paper 147.

Kaldor, Nicholas. 1970. The new monetarism. *Lloyds Bank Review* 97 (July):1–18.

Radcliffe Committee on the Working of the Monetary System. 1959. *Report* Cmnd 827. London: H.M.S.O. (August).

Report to the Congress of the Commission on the Role of Gold in the Domestic and International Monetary Systems. 1982. Vol. 1 (March).

Schwartz, A. J. 1960. Gross dividends and interest payments to corporations at selected dates in the 19th century. In *Trends in the American economy in the nineteenth century.* Studies in Income and Wealth, vol. 24, National Bureau of Economic Research, 407–45.

______. 1969. Short-term targets of some foreign central banks. In *Targets and indicators of monetary policy,* ed. K. Brunner. San Francisco: Chandler Publishing Company.

______. 1987. *Money in historical perspective.* Chicago: University of Chicago Press.

______. 1988. Financial stability and the federal safety net. In *Restructuring banking and financial services in America,* eds. William S. Haraf and Rose Marie Kushmeider. Washington, D.C.: American Enterprise Institute.

______. 1989. Comment on Rymes. In *The measurement of saving, investment, and wealth,* eds. R. E. Lipsey and H. S. Tice. Studies in Income and Wealth, vol. 52. Chicago: University of Chicago Press. Forthcoming.

Schwartz, A. J., and E. Oliver. 1947. *Currency held by the public, the banks, and the Treasury, monthly, December 1917 - December 1944.* Technical Paper 4, National Bureau of Economic Research.

Tobin, James. 1970. Money and income: Post hoc ergo propter hoc? *Quarterly Journal of Economics* 84 (May):301–17.

This Page Intentionally Left Blank