A theory of money and financial institutions: Fiat money and noncooperative equilibrium in a closed economy

Papers | Published: December 1971

Volume 1, pages 243–268, (1971) Cite this article

International Journal of Game Theory

Aims and scope →

Submit manuscript →

Martin Shubik[1]

Abstract

Fiat money is a type paper or symbol with which any individual may buy most things by law. It has virtually no intrinsic value but immediately assumes a trading value when its shortage (i.e., when it is no longer a slack variable to everyone in the appropriate set of simultaneous programs) can prevent trades that would have been deemed profitable in a nonmonetary competitive equilibrium system.

This paper sketches an approach to a theory of fiat money by investigating the properties of a noncooperative dynamic trading game embedded within a closed economic system.

Among the conclusions are that inflation and deflation are not symmetric, and that it is not possible to define a noncooperative game involving borrowing without specifying "rules of borrowing" or a bankruptcy law.

References

ARCHIBALD, G. C., and R. G. LIPSEY: Monetary and Value Theory: A Critique of Lange and Patinkin. Review of Economic Studies, **26**, 1–22, 1958.

Google Scholar

ARROW, K. J., and G. DEBREU: Existence of an Equilibrium for a Competitive Economy. Econometrica, **22**, 265–290, 1954.

Google Scholar

BAGEHOT, W.: Lombard Street. London: Dutton, 1921.

Google Scholar

BAUMOL, W. J.: Stocks, Flows and Monetary Theory. Quarterly Journal of Economics, Vol. 76, February 1962, pp. 46–56.

Google Scholar

BORCH, K.: Economics of Uncertainty. Studies in Mathematical Economics, Vol. 2, Princeton: Princeton University Press, 1968.

Google Scholar

CLOWER, R. W. (ed.): Monetary Theory. Middlesex: Penguin Books Ltd., 1970.

Google Scholar

DIAMOND, P. A.: The Evaluation of Infinite Utility Streams, Econometrica, **33**, 170–177, 1965.

Google Scholar

EINZIG, PAUL: Primitive Money. London: Eyre and Spottiswoode (2nd. printing), 1951.

Google Scholar

Google Scholar

FOLEY, D. K.: Economic Equilibrium with Costly Marketing. Working Paper N. 52, Department of Economics, Massachusetts Institute of Technology, February 1970.

FRIEDMAN, M.: The Quantity Theory of Money: A Restatement in Studies in the Quantity Theory of Money,M. FRIEDMAN (ed.), Chicago: Chicago University Press, 1956, pp. 3–21.

Google Scholar

FRIEDMAN, M., andA. J. SCHWARTZ: A Monetary History of the United States. Princeton: Princeton University Press, 1963.

Google Scholar

GALE, D.: Some Models of Steady State Dynamic Equilibrium. ORC 69-38, December 1969, University of California, Berkeley.

Google Scholar

GURLEY, J. G., and E. S.SHAW: Money in a Theory of Finance. Brookings Institute, 1960.

HAHN, F. H.: Equilibrium with Transactions Costs. Walres-Bowley lecture, Econometric Society, December 1969, mimeographed.

HICKS, J. R.: Value and Capital, Clarendon Press, 1939.

HIRSCHLIEFER, J.: Investment Decision under Uncertainty: Applications of the Static Preference Approach. Quarterly Journal of Economics, Vol. 80, May 1966.

JEVONS, W. S.: Money and the Mechanism of Exchange. London: Kegan Paul (21 ed.), 1910, pp. 1–7.

Google Scholar

JOHNSON, H. G.: Money, Trade and Economic Growth. London: Allen and Clawin, 1964.

Google Scholar

KEYNES, J. M.: The General Theory of Employment, Interest and Money. MacMillan: London, 1936, p. 170.

Google Scholar

KOOPMANS, T. C.: Economic Growth at a Maximal Rate. Quarterly Journal of Economics, August 1964, pp. 355–394.

-: Stationary Ordinal Utility and Impatience. Econometric,**28**, 1970.

LEIJONHUFVUD, A.: Keynes and the Keynesians: A Suggested Interpretation. American Economic Review, Vol. 57, No. 2 (Papers and Proceeding), 1967, pp. 401–410.

Google Scholar

MCKENZIE, L.: Turnpike Theorem for a Generalized Leontief Model. Econometrica,**31**, 165–180, 1963.

Google Scholar

NASH, J. F. JR.: Equilibrium Points in*N*-person Games. Proceedings of the National Academy of Sciences of the U.S.A.,**36**, 48–49, 1950.

Google Scholar

OSTROY, J. M.: Exchange as an Economic Activity. Ph. D. Thesis, Northwestern University, Evanston, Illinois, August 1970.

Google Scholar

PATINKIN, D.: Money, Interest and Prices, 2nd ed. Harper and Row, 1965.

PHELPS, E. S.: The Golden Rule of Accumulation. American Economic Review, September 1961, pp. 467–482.

RADNER, R.: Equilibrium under Uncertainty. Econometrica **36**, 31–58, 1968.

Google Scholar

RUGGLES, N., and R. RUGGLES: The Design of Economic Accounts. New York: The National Bureau of Economic Research, 1970.

Google Scholar

SAMUELSON, P. A.: What Classical and Neoclassical Monetary Theory Really Was. Canadian Journal of Economics **11**, No. 1, 1–15, 1968.

Google Scholar

SCARF, H.: Some Examples of Global Instability of the Competitive Equilibrium. International Economic Review **1**, 1960, No. 3.

SHAPLEY, L. S., and M. SHUBIK: Competition, Welfare and the Theory of Games (unpublished manuscript).

SHUBIK, M.: A Theory of Money and Banking in a General Equilibrium System. Research Memorandum No. 48, Institute for Advanced Study, Vienna, July 1970.

Google Scholar

-: On the Paradox of the Efficient Price System in a Completely Centralized Economy and in a Capitalist Individual Ownership Economy. Rand, P-4689, August 1971.

-: A Theory of Money and Financial Institutions, Part III. Cowles Foundation Discussion Paper No. 324, 1972.

SOLOW, R. M.: Substitution and Fixed Proportions in the Theory of Capital. Review of Economic Studies, June 1962, pp. 207–218.

STARR, R.: Equilibrium and Demand for Media of Exchange in a Pure Exchange Economy with Transactions Costs. Cowles Foundation Discussion Paper no. 300, October 1, 1970.

TOBIN, J.: Money, Capital and Other Stores of Value. American Economic Review (Papers and Proceedings), Vol. 51, May 1961, pp. 26–37.

Google Scholar

TOBIN, J., andW. C. BRAINARD: Financial Intermediaries and the Effectiveness of Monetary Controls. American Economic Review, Vol. 53, May 1963, pp. 383–400.

Google Scholar

VON NEUMANN, J., andO. MORGENSTERN: The Theory of Games and Economic Behavior. Princeton: Princeton University Press, 1944.

Google Scholar

Author information

Authors and Affiliations

Cowles Foundation for Research in Economics, Yale University, 06 520, New Haven, Connecticut

Martin Shubik

Additional information

This research was supported by the Office of Naval Research. The research was also partially supported by a grant from the Ford Foundation. The author wishes to thankLLOYD SHAPLEY for his help and insights given in many conversations. Miscalculations, assertions and errors are my own.

Rights and permissions

About this article

Cite this article

Shubik, M. A theory of money and financial institutions: Fiat money and noncooperative equilibrium in a closed economy. *Int J Game Theory* **1**, 243–268 (1971). https://doi.org/10.1007/BF01753448

Received

15 May 1972

Issue Date

December 1971

DOI

https://doi.org/10.1007/BF01753448

Keywords

Economic Theory
Game Theory
Economic System
Financial Institution
Equilibrium System