THE NEW PALGRAVE A DICTIONARY OF ECONOMICS

EDITED B.

JOHN EATWELL

MURRAY MILGATE

PETER NEWMAN

Volume 3 K to P

M

THE MACMILLAN PRESS LIMITED, LONDON THE STOCKTON PRESS, NEW YORK MARUZEN COMPANY LIMITED, TOKYO

C The Macmillan Press Limited, 1987

All rights reserved.

No part of this publication may be reproduced or transmitted, in any form or by any means, without permission.

The New Palgrave: A Dictionary of Economics

Edited by John Eatwell, Murray Milgate and Peter Newman
in four volumes, 1987

Published in the United Kingdom by THE MACMILLAN PRESS LIMITED, 1987

London and Basingstoke

Associated companies in Auckland, Delhi, Dublin, Gaborone, Hamburg, Harare, Hong Kong, Johannesburg, Kuala Lumpur, Lagos, Manzini, Melbourne, Mexico City, Nairobi, New York, Singapore, Tokyo.

Published in the United States of America and Canada by THE STOCKTON PRESS, 1987
15 East 26th Street, New York, NY10010, USA

Published in Japan by
MARUZEN COMPANY LIMITED, 1987
3-10, Nihonbashi 2-Chome, Chuo-Ku, Tokyo 103, Japan

Reprinted 1988 (twice)

The New Palgrave is a trademark of The Macmillan Press Limited

Library of Congress Cataloging-in-Publication Data

The New Palgrave: a dictionary of economics
Sequel to: Dictionary of political economy/Robert
Harry Inglis Palgrave. 1910.

Bibliography: p. Includes index.

1. Economics - Dictionaries. I. Eatwell, John. II. Milgate, Murray. III. Newman, Peter K. 1928

IV. Palgrave, Robert Harry Inglis, Sir, 1827-1919.

Dictionary of political economy.

HB61.N49 330'.03'21 87 1946

ISBN 0-935859-10-1 (set)

British Library Cataloguing in Publication Data

The New Palgrave: a dictionary of economics

1. Economics—Dictionaries

I. Eatwell, John. II. Milgate, Murray

III. Newman, Peter.

330.03'21 HB61

ISBN 0-333-37235-2

LIST OF ENTRIES A – Z

One-line cross-references are shown in italics.

Allen, George Cyril (1900-1982)

allocation

Almon lag

altruism

allocation of time

alternative technology

Allen, Roy George Douglas (1906-1983)

allocation: strategy-proof mechanisms

Almon, Shirley Montag (1935-1975)

American Economic Association

Abbott, Edith (1876-1957) Abramovitz, Moses (born 1912) absentee absolute and exchangeable value absolute income hypothesis absolute rent absorption approach to the balance of payments absorptive capacity abstinence abstract and concrete labour acapitalistic production acceleration principle accounting and economics accumulation of capital activity analysis acvelicity Adams, Henry Carter (1851-1921) adaptive expectations added worker effect adding-up problem additive preferences additive utility function adjustment costs adjustment processes and stability administered prices advances adverse selection advertising advisers Aftalion, Albert (1874-1956) ageing populations agency costs agent agents of production aggregate demand and supply analysis aggregate demand theory aggregate production function aggregate supply function aggregation of economic relations aggregation problem agrarianism agricultural economics agricultural growth and population change agricultural supply agriculture and economic development aidAkerman, Johan Gustav (1888-1959) Akerman, Johan Henrik (1896-1982) Alchian, Armen Albert (born 1914) alienation Allais, Maurice (born 1911)

Allais paradox

Amoroso, Luigi (1886-1965) amortization analogy analysis of variance anarchism Anderson, James (1739-1808) Anderson, Oskar Nikolavevich $(1887 \cdot 1960)$ Andreades, Andreas (1876-1935) Andrews, Philip Walter Sawford (1914 1971)Angell, James Waterhouse (1898-1986) animal spirits anomalies anthropology, economic antitrust policy Antonelli, Giovanni Battista (1858-1944) Aoyama, Hideo (born 1910) appropriate technology Aguinas, St Thomas (1225-1274) arbitrage arbitrage pricing theory arbitration ARIMA models Aristotle (384-322 BC) arms races Armstrong, Wallace Edwin (1892-1980) Arndt, Heinz Wolfgang (born 1915) Arrow corner Arrow-Debreu model of general equilibrium Arrow's theorem Asgill, John (1659-1738) Ashley, William James (1860-1927) Ashton, Thomas Sutcliffe (1889-1968) asset pricing assets and liabilities assignment problems asymmetric information atomistic competition attributes Attwood, Thomas (1783-1856) auctioneer vii

Aupetit, Albert (1876-1943) Auspitz, Rudolf (1837-1906) Austrian conceptions of competition Austrian School of Economics autarky autocorrelation automatic stabilizers autonomous expenditures autoregressive and moving-average time-series processes autoregressive-integrated-moving average models average and normal conditions average cost pricing average industry average period of production Averch-Johnson effect axiomatic theories Avres, Clarence Edwin (1891-1972) Babbage, Charles (1791-1871) Babeuf, François Noël (1764-1797) **Bachelier**, Louis (1870–1946) backwardation backward bending supply curve backward linkage backwardness Bagehot, Walter (1826-1877) Bailey, Samuel (1791-1870) Bain, Joe Staten (born 1912) Bakunin, Mikhael Alexandrovitch (1814 1876) balanced budget multiplier balanced growth balance of payments balance of trade, history of the theory balance of trade doctrine balance sheet Balogh, Thomas (1905-1985) Banfield, Thomas Charles (1800-?1882) Banking School, Currency School, Free **Banking School** bank rate hanks Baran, Paul Alexander (1910-1964) Barbon, Nicholas (1637/40 ?1698) bargaining Barone, Enrico (1859-1924) barriers to entry barter barter and exchange Barton, John (1789-1852) basics and non-basics basing point system

auctions

Bastable, Charles Francis (1855–1945) bastard Keynesianism Bastiat, Claude Frédéric (1801-1850) Baudeau, Nicolas (1730 c1792) Bauer, Otto (1881-1938) Bauer, Peter Tamas (born 1915) Bayes, Thomas (1702 1761) Bayesian inference Beccaria, Cesare Bonsana, Marchese di (1738 1794)Beeke, Henry (1751-1837) Beer, Max (1864-1943) beggar-thy-neighbour behavioural economics benefit principle Bentham, Jeremy (1748-1832) Bergson, Abram (born 1914) Berkeley, George (1685-1753) Berle, Adolf Augustus, Jr. (1895-1971) Bernoulli, Daniel (1700 1782) Bernoulli, James [Jakob, Jacques] (1654 1705) Bernstein, Eduard (1850 1932) Berry, Arthur (1862-1929) Bertalanffy, Ludwig von (1901-1972) Bertrand, Joseph Louis François (1822 1900)best linear unbiased estimator (BLUE) Bettelheim, Charles (born 1913) Beveridge, William Henry (1879-1963) biased and unbiased technological change Bickerdike, Charles Frederick (1876-1961) bidding bid-rent function bilateral monopoly bimetallism bioeconomics biological applications of economics Birck, Laurits Vilhelm (1871-1933) Birmingham School birth-and-death processes birth rate Black, Duncan (born 1908) black market Blake, William (c1774-1852) Blanc, Louis Joseph Charles (1811 - 1882)Blanqui, Jérôme-Adolphe (1798-1854) Bloch, Marc (1886-1944) Bodin, Jean (1530-1596) Böhm-Bawerk, Eugen von (1851-1914) Boisguilbert, Pierre le Pesant, Sieur de (1645 1714)Bonar, James (1852 1941) bonds booms and slumps Borda, Jean-Charles de (1733-1799) Bortkiewicz, Ladislaus von (1868-1931) Boulding, Kenneth Ewart (born 1910) bounded rationality bounties bourgeoisie Bowley, Arthur Lyon (1869-1957)

Bowley, Marian (born 1911) Bowman, Mary Jean (born 1908) Boyd, Walter (1754-1837) Brady, Dorothy Stahl (1903-1977) brain drain **Braudel, Fernand** (1902) 1985) Braverman, Harry (1920 1976) Bray, John (1809-1897) Breckinridge, Sophonisba Preston (1866 1948)Brentano, Lujo (Ludwig Josef) (1844 1931) Bresciani-Turroni, Costantino (1882 1963)Bretton Woods bribery Bright, John (1811-89) Bronfenbrenner, Martin (born 1914) Brougham, Henry (1773-1868) Brown, (Ernest) Henry Phelps Brown, Harry Gunnison (1880 1975) Brownian motion Brydges, Samuel Egerton, (1762-1837) **bubbles** Buchanan, David (1779 1848) Bücher, Karl Wilhelm (1847-1930) Buckle, Henry Thomas (1821-1862) budgetary policy budget constraint budget deficit buffer stocks built-in stabilizers Bukharin, Nikolai Ivanovitch (1888 1938)**Bullionist Controversy** Bullock, Charles Jesse (1869-1941) bunch maps burden of the debt bureaucracy Buridan, Jean (c1295-1356) Burke, Edmund (1729-1797) Burns, Arthur Frank (1904–1987) Burns, Arthur Robert (1895 1981) Burns, Emile (1889-1972) Burns, Eveline Mabel (1900-1985) business cycles by-products Cairnes, John Elliott (1823-1875) calculus of variations cameralism Canard, Nicolas-François (c1750-1833) Cannan, Edwin (1861-1935) Cantillon, Philip (fl. 1725-1759) Cantillon, Richard (1697-1734) capital, circulating capital, constant capital, credit and money markets capital, fictitious capital, fixed capital, measurement of capital, quantity of capital accumulation capital as a factor of production capital as a social relation capital asset pricing model capital budgeting

capital controversy capital flight capital gains and losses capital goods capitalism capitalism, contradictions of capitalistic and acapitalistic production capitalization capital markets capital perversity capital structure capital taxation capital theory: debates capital theory: paradoxes capital utilization Carey, Henry Charles (1793-1879) Carey, Mathew (1760-1839) Carlyle, Thomas (1795-1881) Carroll, Lewis (Charles Lutwidge Dodgson) (1832-1898) cartel Carver, Thomas Nixon (1865-1961) cash balances Cassel, Gustav (1866–1944) catallactics catastrophe theory catching-up Cattaneo, Carlo (1801-1861) causal inference causality in economic models Cazenove, John (1788 1879) censored data models central banking centralization central place theory central planning centre of gravitation certainty equivalent **CES** production function ceteris paribus Ceva, Giovanni (1647/48-1734) Chadwick, Edwin (1800-1890) **Chalmers, Thomas** (1780–1847) Chamberlin, Edward Hastings Champernowne, David Gawen (born 1912) chance changes in tastes characteristics charity chartism chartism: the points of the Charter Chayanov, Alexander Vasil'evich (1888 - ?1939)cheap money Cherbuliez, Antoine Elisée (1797-1869) Chernyshevskii, Nikolai Garilovich (1828 - 1889)Chevalier, Michel (1806-1879) Cheysson, Jean-Jacques Emile (1836-1910)Chicago School Child, Josiah (1630-1699) choice of technique and rate of profit choice theory chrematistics

Christaller, Walter (1894-1975) common property rights control and coordination of economic Christian Socialism Commons, John Rogers (1862-1945) activity circular flow communications convergence hypothesis circulating capital communism convexity communism, full circulating media convex programming community indifference curves Ciapham, John Harold (1873-1946) cooperative equilibrium Clark, Colin Grant (born 1905) comparative advantage cooperative games Clark, John Bates (1847-1938) comparative statics co-operatives Copland, Douglas Berry (1894-1971) Clark, John Maurice (1884-1963) compensated demand class compensation cores classical conceptions of competition compensation principle Corn Laws classical economics competition corn model classical growth models competition: Austrian conceptions corporate economy classical theory of distribution competition: classical conceptions corporate taxation classical theory of money competition: marxian conceptions corporations classical theory of production competition, imperfect corporatism correlation analysis classical theory of wages competition, monopolistic correspondence principle classification competition, perfect Cliffe Leslie, Thomas Edward competition and efficiency correspondences (1827 - 1882)competition and selection Cossa, Luigi (1831-1896) cliometrics competition and stability cost and supply curves cost-benefit analysis competition in international trade closed systems competition policy cost functions clubs competitive market processes cost minimization and utility maximizacoalitions complementarity tion Coase, Ronald Harry (born 1910) computation of general equilibria cost of living Coase Theorem Cobb-Douglas functions Comte, Auguste (1798-1857) cost of production cost-plus pricing Cobbett, William (1763-1835) concavity cost-push inflation Cobden, Richard (1804-1865) concentration ratios costs of adjustment Condillac, Etienne Bonnot de cobweb theorem (1714 - 1780)counterfactuals Coddington, Alan (1941-1982) codetermination and profit-sharing Condorcet, Marquis de (1743-1794) countertrade Coghlan, Timothy (1855 1926) countervailing power conflict and settlement Courcelle-Seneuil, Jean Gustave Cohen, Ruth Louisa (born 1906) congestion (1813 - 1892)conglomerates Cohen Stuart, Arnold Jacob conjectural equilibria Cournot, Antoine Augustin (1801-1877) (1855 - 1921)Court, Louis Mehel (born 1910) Cohn, Gustav (1840-1919) conjectual variation consols (Consolidated Fund) crawling peg Colbert, Jean-Baptiste (1619-1683) creative destruction Colbertism conspicuous consumption constant and variable capital credit Cole, George Douglas Howard credit cycle constant elasticity of substitution (1889 - 1959)production function credit markets collective action credit rationing constant returns collective agriculture crime and punishment constitutional economics collective bargaining constraint qualification crises collective goods critical path analysis collegium consumer durables Croce, Bendetto (1866-1952) Collet, Clara Elizabeth (1860-1948) consumers' expenditure consumer surplus Crosland, Anthony (1918-1977) collusion colonialism consumption, conspicuous cross-elasticity colonies consumption and production cross-section analysis crowding out Colguhoun, Patrick (1745-1820) consumption function Crowther, Geoffrey (1907-1972) Colson, Léon Clément (1853-1939) consumption-loan models consumption sets culture Colwell, Stephen (1800-1871) cumulative causation consumption taxation combination contestable markets cumulative processes combinatorics Cunningham, William (1849-1919) contingent commodities command economy Cunynghame, Henry Hardinge continuity in economic history commerce $(1848 \cdot 1935)$ continuous and discrete time models commodities continuous-time stochastic models currencies commodities, contingent currency boards continuous-time stochastic processes commodity fetishism commodity money Currency School continuum economies Currie, Lauchlin Bernard (born 1902) commodity price stabilization contract curve custom commodity reserve currency contract theory customs unions common land contradiction cycles in socialist economies contradictions of capitalism

cyclical fluctuations

common law

common markets

(1887 - 1962)

Dalton, Edward Hugh John Neale,

Darwinism Davanzati, Bernardo (1529-1606) Davenant, Charles (1656-1714) Davenport, Herbert Joseph (1861-1931) Davidson, David (1854-1942) dear money death duties death processes death rate débouchés, théorie des debt decentralization decision theory declining industries declining population defence economics deficit financing deficit spending De Finetti, Bruno (1906-1985) Defoe, Daniel (1660-1731) degree of monopoly degree of utility deindustrialization delivery lags Del Mar, Alexander (1836-1926) Del Vecchio, Gustavo De Malvnes, Gerard demand, empirical studies of demand, integrability of demand for money: empirical studies demand for money: theoretical studies demand management demand price demand-pull inflation demand theory demographic transition demography De Moivre, Abraham (1667-1754) dependency depletion depopulation depreciation depressions De Quincey, Thomas (1785-1859) deregulation derived demand de-skilling Destutt de Tracy, Antoine Louis Claude $(1754 \cdot 1836)$ determinism De Tocqueville, A devaluation developing countries, fiscal and monetary policies development economics development planning De Viti de Marco, Antonio dialectical materialism dialectical reasoning Dickinson, Henry Douglas (1899-1969) **Diderot, Denis** (1713-1784) Dietzel, Carl August (1829-1884) Dietzel, Heinrich (1857-1935)

difference principle differential rent differential topology difficulty of attainment difficulty or facility of production diffusion of technology dimensional invariance dimensions of economic quantities diminishing returns directly unproductive profit-seeking (DUP) activities direct taxes discommodities discount discrete choice models discrete time models discriminating monopoly discrimination diseconomies of scale disequilibrium analysis disguised unemployment disintermediation distance functions distortions distributed lags distribution, ethics of distribution, law of distribution-free estimation distribution-free methods distribution theories: classical distribution theories: Keynesian distribution theories: Marxian distribution theories: neoclassical distributive justice diversification of activities divided populations and stochastic models dividend policy Divisia, François Jean Marie (1889 1964) Divisia index division of labour Dmitriev, Vladimir Karpovich (1868 - 1913) Dobb. Maurice Herbert (1900-1976) Dodgson, Charles Lutwidge Domar, Evsey David (born 1914) Domesday Book domestic labour Donisthorpe, Wordsworth (1847-?) Dorfman, Joseph (born 1904) double-entry bookkeeping Douglas, Clifford Hugh (1879-1952) Douglas, Paul Howard (1892-1976) dual economies duality Dühring, Eugen Karl (1833-1921) dummy variables dumping Dunbar, Charles Franklin (1830-1900) Dunlop, John Thomas (born 1914) Dunoyer, Barthélémy Charles Pierre Joseph (1786-1862) duopoly DUP activities

Du Pont de Nemours, Pierre Samuel (1739 - 1817)Dupuit, Arsène-Jules-Emile Juvenal $(1804 \cdot 1866)$ Durand, David (born 1912) duration of life Durbin, Evan Frank Mottram (1906 - 1948)Durkheim, Emile (1858-1917) dynamic programming and Markov decision processes Easterlin hypothesis East-West economic relations Eckstein, Otto (1927-1984) Ecole Nationale des Ponts et Chaussées econometrics economic anthropology economic calculation in socialist economies economic freedom economic goods economic growth economic harmony economic history economic integration economic interpretation of history economic laws economic man economic organization and transaction economics and philosophy economics and politics economics and psychology economics and race economic science and economics economics libraries and documentation economics of sports economic surplus and the equimarginal principle economic theory and the hypothesis of rationality economic theory of the state economic war economies and diseconomies of scale économistes Eden, Frederick Morton (1766-1809) Edgeworth, Francis Ysidro (1845-1926) Edgeworth as a statistician Edgeworth, Maria (1767-1849) education, economics of effective demand effective protection 'effectual demand' in Adam Smith efficient allocation efficient market hypothesis egoism Einaudi, Luigi (1874-1961) Einzig, Paul (1897-1973) elasticities approach to the balance of payments elasticity elasticity of substitution elections Ellet, Charles, Jr. (1810-1862) Ely, Richard Theodore (1854-1943) embargo

differential games

emigration expected utility and mathematical fictitious capital expectation fiducial inference empiricism fiduciary issue employer expected utility hypothesis employment, full expenditure functions final degree of utility employment, theories of expenditure tax final utility empty boxes expense curve finance experience finance and saving enclosures endogeneity and exogeneity experimental methods in economics (i) finance capital financial crisis endogeneous and exogenous money experimental methods in economics (ii) financial intermediaries endowments exploitation financial journalism energy economics export-led growth enforcement financial markets exports extended family Engel, Ernst (1821-1896) financial markets, spot and forward Finetti, Bruno de Engel curve extended reproduction fine tuning Engel's Law extensive and intensive rent Engels, Friedrich (1820-1895) Finley, Moses (1912-1986) extensive form games firm, theory of the English historical school external debt fiscal and monetary policies in developenlightenment external economies entitlements externalities ing countries entrepreneur fiscal federalism extortion entropy Fabian economics fiscal policy entry and market structure Fabricant, Solomon (born 1906) fiscal stance Fisher, Irving (1867-1947) envelope theorem factor analysis environmental economics factor-price equalization theorem Fisher, Ronald Aylmer (1890-1962) factor-price frontier fisheries Ephémérides du citoyen ou chronique de factor reversals fixed capital l'esprit national factory system fixed exchange rates epistemological issues in economics facts fixed factors fixed point theorems equality fair division equal rates of profit fairness fixprice models Fleming, John Marcus (1911-1976) equation of exchange fairs and markets flexible exchange rates equilibrium: an expectational concept falling rate of profit equilibrium: development of the concept false trading flexprice models equity family floating exchange rates Florence, Philip Sargant (1890-1982) equivalent income scales family allowance ergodic theory family planning flow of capital Erhard, Ludwig (1897-1977) famine flow of funds Erlich, Alexander (1913-1985) 'Famous Fiction' flows and stocks error, law of Fanno, Marco (1878-1965) Flux, Alfred William (1867-1942) errors in specification farm economics Forbonnais, François Véron Duverger de errors in variables (1722 - 1800)farming Farr, William (1807-1883) forecasting estimation Eucken, Walter (1891-1950) Farrell, Michael James (1926-1975) forced labour forced saving **Euler's Theorem** Eurodollar Market fashion foreign advisers Fasiani, Mauro (1900-1950) foreign aid Evans, Griffith Conrad (1887–1973) Faustmann, Martin (1822-1876) foreign investment evolution Fawcett, Henry (1833-1884) foreign trade examples Fawcett, Millicent Garrett (1847-1929) foreign trade multiplier ex ante and ex post Fay, Charles Ryle (1884-1961) excess capacity forests excess demand and supply fecundity forward markets Fourier, François Marie Charles exchange federalism Fel'dman, Grigorii Alexandrovich (1772 - 1837)exchangeable value (1884-1958)Foxwell, Herbert Somerton (1849-1936) exchange control Fellner, William John (1905-1983) Franklin, Benjamin (1706-1790) exchange rate policy female labour force participation fraud exchange rates excise duties Ferguson, Adam (1723-1815) free banking exhaustible resources Ferrara, Francesco (1810-1900) free disposal fertility freedom existence of general equilibrium

fetishism

feudalism

fiat money

Fetter, Frank Albert (1863-1949)

Fetter, Frank Whitson (born 1899)

Fichte, Johann Gottlieb (1762-1814)

exit and voice

exogenous money

expectation of life

expectational equilibrium

exogeneity

expectations

free enterprise

free trade and protection

frictional unemployment

free entry

free goods

free lunch

free rider

frictions and rigidities Friedman, Milton (born 1912) Friend, Irwin (born 1915) Frisch, Ragnar Anton Kittel (1895 - 1973)Frobenius theorem full and limited information methods Fullarton, John (1780?-1849) full communism full-cost pricing full employment full employment budget surplus functional analysis functional finance **functions** fundamental disequilibrium fungibility Fuoco, Francesco (1774-1841) futures markets, hedging and speculation futures trading fuzzy sets gains from trade Gaitskell, Hugh Todd Naylor (1906-1963)Galbraith, John Kenneth (born 1908) Galiani, Ferdinando (1728-1787) games with incomplete information game theory gaming contracts Ganilh, Charles (1785-1836) Garnier, Clément Joseph (1813-1881) gauge functions Gaver, Arthur David (1903-51) Geary, Robert Charles (1896-1983) Gee, Joshua (fl. 1725-1750) gender general equilibria, computation of general equilibrium general equilibrium, existence of general systems theory Genovesi, Antonio (1712-1769) George, Henry (1839-1897) Georgescu-Roegen, Nicholas (born 1906) German historical school Gerschenkron, Alexander (1904-1978) Gervaise, Isacc (fl. 1680-1720) Gesell, Silvio (1862-1930) Giblin, Lyndhurst Falkiner (1872-1951) Gibrat. Robert Pierre Louis (1904-1980) Gibrat's Law Gide, Charles (1847-1932) Giffen, Robert (1837-1910) Giffen's Paradox gifts **Gilbert**, Milton (1909 1979) Gilman, Charlotte Perkins (1860-1935) Gini, Corrado (1884-1965) Gini ratio Gioia, Melchiorre (1767-1829) global analysis global stability gluts Godwin, William (1756-1836) golden age

golden rule Goldsmith, Raymond William (born 1904) Goldsmith, Selma (1912-1962) gold standard Gonner, Edward Carter Kersey (1862 - 1922)goods and commodities Gordon, Robert Aaron (1908-1978) Goschen, George Joachim, Viscount $(1831 \cdot 1907)$ Gossen, Hermann Heinrich (1810-58) Gournay, Marquis de (1712-1759) government borrowing government budget restraint government ownership government regulation Graham, Frank Dunstone (1890-1949) Gramsci, Antonio (1891-1937) graph theory Gras, Norman Scott Brien (1884-1956) Graunt, John (1620-1674) gravitation gravity models Gray, Alexander (1882-1968) Grav, John (1799-1883) Gray, Simon (alias George Purves, LLD) (fl. 1795-1840) Gregory, Theodore Emanuel Gugenheim (1890 - 1970)Gresham, Thomas (c1519-1579) Gresham's Law Grossmann, Henryk (1881-1950) gross revenue gross substitutes Grotius (de Groot), Hugo (1583-1645) group decisions group (Lie group) theory Groves-Ledvard mechanism growth, immiserizing growth, measurement of growth accounting growth and cycles growth and inflation growth and international trade growth models, classical growth models, neoclassical growth theory Haavelmo, Trygve (born 1911) Habakkuk, John Hrothgar (born 1915) Haberler, Gottfried (born 1900) habit persistence Hadley, Arthur Twining (1856-1930) Hagen, Everett Einar (born 1906) Hahn problem Halévy, Elie (1870-1937) Hamilton, Alexander (1755-1804) Hamilton, Earl Jefferson (born 1899) hamiltonians Hammarskjöld, Dag (1905-1961) Hammond, John Lawrence le Breton (1872-1949) and Lucy Barbara (1873 - 1961)Hansen, Alvin (1887-1975) Hardenberg, Georg Friedrich Philipp von Hardy, Charles Oscar (1884-1948)

harmony Harris, Seymour Edwin (1897-1975) Harris-Todaro model Harrod, Roy Forbes (1900-1978) Harrod-Domar growth model Hart, Albert Gailord (born 1909) Hawkins-Simon conditions Hawtrey, Ralph George (1879-1975) Hayek, Friedrich August von (born 1899) Hayek effect health economics Hearn, William Edward (1826 1888) Heckscher, Eli Filip (1879-1952) Heckscher-Ohlin trade theory hedging hedonic functions and hedonic indexes hedonism Hegelianism Helfferich, Karl (1872-1924) Heller, Walter Wolfgang (1915-1987) Helvetius, Claude Adrien (1715-1771) Henderson, Alexander (1914-1954) Henderson, Hubert Douglas (1890-1952) heredity Herfindahl index Hermann, Friedrich Benedict Wilhelm von (1795-1868) Herskovits, Melville Jean (1895-1963) heterogeneous capital models heteroskedasticity Hicks, John Richard (born 1904) Hicks, Ursula Kathleen (1896-1985) hidden actions, moral hazard and contract theory hidden hand hierarchy higgling Higgs, Henry (1864-1940) high-powered money and the monetary Hildebrand, Bruno (1812-1878) Hilferding, Rudolf (1877-1941) Hill, Polly (born 1914) Hirschman, Albert Otto (born 1915) historical cost accounting historical demography historical school hoarding Hobbes, Thomas (1588-1679) Hobson, John Atkinson (1858-1940) Hodgskin, Thomas (1787-1869) Hollander, Jacob Harry (1871-1940) Homan, Paul Thomas (1893-1969) homogeneous and homothetic functions homoskedasticity Horner, Francis (1778-1817) Hotelling, Harold (1895-1973) hot money hours of labour household budgets household production housework housing markets human capital human nature

humbug production function Hume, David (1711-1776) hunger hunting and gathering economies Huskisson, William (1770-1830) Hutcheson, Francis (1694-1746) Hutchison, Terence Wilmet (born 1912) Hymer, Steven Herbert (1934-1974) Hyndman, Henry Mayers (1842-1921) hyperinflation hypothesis testing ideal indexes ideal output ideal-type identification ideology immigration immiserizing growth impatience imperfect competition imperfectionist models imperialism implicit contracts import duties import substitution and export-led growth impossibility theorem imprisonment imputation incentive compatibility incentive contracts

incidence of taxation income income distribution income-expenditure analysis incomes policies income taxes incomplete contracts incomplete information games

incomplete markets increasing returns indentured labour indexed securities indexing index numbers indicative planning indicators indifference, law of indifference curves indirect taxes indirect utility function individualism indivisibilities induction industrialization industrial organization industrial partnership industrial relations

inequality inequality between nations inequality between persons inequality between the sexes inequality of pay

infant industry

industrial revolution

inequalities

infant mortality inflation inflation accounting inflation and growth inflationary expectations inflationary gap informal economy information theory Ingram, John Kells (1823-1907)

inheritance inheritance taxes

Innis, Harold Adams (1894-1952) innovation

input-output analysis institutional economics instrumental variables

instruments

insurance, economics of integer programming integrability of demand intelligence

intensive rent interdependent preferences interest and profit

interest rates interests

intergenerational models inter-industry analysis internal economies internal migration internal rate of return international capital flows international finance

international income comparisons international indebtedness international inequality

international liquidity international migration international monetary institutions

international monetary policy

international trade

interpersonal utility comparisons intertemporal equilibrium and efficiency intertemporal portfolio theory and asset

pricing

invariable standard of value invariance principles

inventories inventory cycles inventory policies under certainty

investment

investment and accumulation investment decision criteria investment planning invisible hand

involuntary unemployment iron law of wages

IS-LM analysis Isnard, Achylle Nicolas (1749-1803)

Jaffé, William (1898-1980) Jaszi, George (born 1915) Jefferson, Thomas (1743-1826) Jenkin, Henry Charles Fleeming

(1833 1885)

Jennings, Richard (1814-1891)

Jevons, William Stanley (1835-1882) Jevons as an economic theorist Jewkes, John (born 1902) Johannsen, Nicolas (1844-1928) Johansen, Leif (1930-1982) Johnson, Alvin Saunders (1874-1971) Johnson, Harry Gordon (1923-1977) Johnson, William Ernest (1858-1931) joint production

joint production in linear models Jones, George Thomas (1902-1929) Jones, Richard (1790-1855)

Joplin, Thomas (c1790-1847) Juglar, Clémont (1819-1905)

iurisprudence

Justi, Johannn Heinrich Gottlob von (1720-1771)

iustice just price

Kahn, Richard Ferdinand (born 1905) Kaldor, Nicholas (1908-1986)

Kalecki, Michal (1899-1970) Kantorovich, Leonid Vitalievich

(1912 - 1986)Kathedersozialisten

Katona, George (1901-1981)

Kautsky, Karl (1854-1938) Kelley, Augustus Maverick (born 1913)

Kemmerer, Edwin Walter (1875-1945) Kendall, Maurice George (1907-1983)

Kessel, Reuben Aaron (1923-1975) Keynes, John Maynard (1883-1946) Keynes, John Neville (1852-1949)

Kevnes's General Theory

Keynesian distribution theories Keynesianism

Keynesian Revolution

Keyserling, Leon Hirsch (born 1908) Kindleberger, Charles Poor (born 1910)

King, Gregory (1648-1712) kinked demand curve

kinship

Kitchin, Joseph (1861-1932)

Knapp, Georg Friedrich (1842-1926) Knies, Karl Gustav Adolf (1821-1898)

knife-edge problem

Knight, Frank Hyneman (1885-1962)

Knights Templar

Kondratieff, Nikolai Dmitrievich (1892 - ?1931)

Kondratieff cycle

Konüs, A.A. (born 1895)

Koopmans, Tjalling Charles (1910-1985) Koyck [Koijck], Leendert Marinus

(1918 1962)

Kuczynski, Jurgen Peter (born 1904)

Kuh, Edwin (1925-1986) Kuhn-Tucker theory

Kuznets, Simon (1901-1985)

Kuznets swings labour, abstract labour contracts

labour economics labour exchange

labour-managed economies labour market discrimination labour markets labour power labour process labour supply of women labour surplus economies labour theory of value Lagrange multipliers laissez-faire, laissez-passer, history of the maxim land reform land rent Landry, Adolphe (1874-1956) land tax land tenure Lange, Oskar Ryszard (1904-1965) Lange-Lerner mechanism Lardner, Dionysius (1793-1859) large economies Laspeyres, Ernst Louis Etienne (1834-1913)Lassalle, Ferdinand (1825-1864) latent variables latifundia Lauderdale, Eighth Earl of (1759-1839) Laughlin, James Laurence (1850-1933) Launhardt, Carl Friedrich Wilhelm (1832 - 1918)Laveleye, Emile de (1822-1892) Lavington, Frederick (1881-1927) Law, John (1671-1729) law and economics law enforcement law of indifference law of large numbers law of supply and demand layoffs Layton, Walter Thomas (1884-1966) leads and lags learning-by-doing least squares Le Chatelier Principle Lederer, Emil (1882-1939) Lefebvre, Georges (1874-1959) Lehfeldt, Robert Alfred (1868-1927) leisure leisure class Lemercier de la Rivière, Pierre Paul lemons Lenin, Vladimir Ilvich [Ulyanov] (1870 - 1924)Leontief, Wassily (born 1906) Leontief paradox Lerner, Abba Ptachya (1905-1982) Leroy-Beaulieu, Pierre-Paul (1843-1916) Leslie, T.E. Cliffe Le Trosne, Guillaume François (1728 - 1780)Lewis, W. Arthur (born 1915) lexicographic orderings Lexis, Wilhelm (1837-1914) liabilities Liapunov functions liberalism liberty libraries Lieben, Richard (1842-1919)

life insurance life tables likelihood limited dependent variables limited information methods limit pricing limits to growth Lindahl, Erik Robert (1891-1960) Lindahl equilibrium Lindahl on public finance linear models linear programming linkages Lintner, John Virgil (1916-1983) liquidity liquidity preference List, Friedrich (1789-1846) Liu, Ta-Chung (1914-1975) Lloyd, William Forster (1794-1852) loanable funds local public finance local stability location of economic activity Locke, John (1632-1704) logical positivism logit, probit and tobit lognormal distribution long cycles Longe, Francis David (1831-18??) Longfield, Mountifort (1802-1884) long-run and short-run long swings in economic growth Lorenz curve Loria, Achille (1857-1943) Lösch, August (1906-1945) Lotka, Alfred James (1880-1949) lotteries Lowe, Adolph (born 1893) low pay Lovd. Samuel Jones lump sum taxes Lundberg, Erik Filip (born 1907) Lutz, Friedrich August (1901-1975) Luxemburg, Rosa (1870-1919) Lyapunov functions Lyapunov's theorem McCulloch, John Ramsay (1789-1864) Macfie, Alec Lawrence (1898-1980) machinery question Machlup, Fritz (1902-1983) Macleod, Henry Dunning (1821-1902) macroeconometric models macroeconomics: relations with microeconomics Mahalanobis, Prasanta Chandra (1893-1972)Maine, Henry James Sumner (1822 - 1888)maintaining capital intact Maitland, James majority voting Makower, Helen (born 1910) Malthus, Thomas Robert (1766-1834) Malthus and classical economics

life cycle hypothesis

Malthus's theory of population Malynes, Gerard de (fl. 1586-1623) management science managerial capitalism Manchester School Mandeville, Bernard (1670-1733) Mangoldt, Hans von (1824-1868) Manoïlescu, Mihail (1891-?1950) manorial system Mantoux, Paul (1877-1956) manufacturing and deindustrialization Mao Zedong [Mao Tse-Tung] $(1893 \cdot 1976)$ Marcet, Jane (1769-1858) Marchal, Jean (born 1905) Marczewski, Jean (born 1908) Marget, Arthur William (1899-1962) marginal and average cost pricing marginal efficiency of capital marginalist economics marginal productivity theory marginal utility of money market clearing market failure marketing boards market period market places market price markets, financial markets, perfect and imperfect market share market socialism market structure market structure and innovation market value and market price Markov processes mark-up pricing marriage Marschak, Jacob (1898-1977) Marshall Alfred (1842-1924) Marshall, Mary Paley (1850-1944) Marshall-Lerner condition Martin, Henry (died 1721) Martineau, Harriet (1802-1876) martingales Marx, Karl Heinrich (1818-1883) Marxian value analysis Marxism Marxist economics Mason, Edward Sagendorph (born 1899) Massé, Pierre (born 1898) Massie, Joseph (died 1794) material balances materialism mathematical economics mathematical method in political economy matrix multiplier maximum likelihood maximum satisfaction Mazzola, Ugo (1863-1899) Meade, James Edward (born 1907) meaningfulness and invariance Means, Gardiner Coit (born 1896) mean value

Neumann, Franz (1900-1954)

mean-variance analysis measurement, theory of measurement of economic growth measures of value measure theory media of exchange mediation medical care Meek, Ronald Lindley (1917-1978) Menger, Anton (1841-1906) Menger, Carl (1840 1921) Menger, Karl (1902-1985) mercantilism Mercier de la Rivière, Pierre-Paul (1720 - 1793/4)mergers merit goods Merivale, Herman (1806-1874) Methodenstreit methodology Metzler, Lloyd Appleton (1913-1980) Meynieu, Mary (died 1877) microanalytic systems microeconomics middle class migration, internal migratory labour militarism military expenditure Mill, James (1773-1836) Mill. John Stuart (1806-1873) Mill, John Stuart as economic theorist Millar, John (1735-1801) mines minimum wages Mirabeau, Victor Riquetti, Marquis de (1715 - 1789)Mises, Ludwig Edler von (1881-1973) Misselden, Edward (fl. 1608-1654) Mitchell, Wesley Clair (1874-1948) mobility models and theory models of growth mode of production Modigliani Miller theorem Molinari, Gustave de (1819-1912) monetarism monetary approach to the balance of payments monetary base monetary cranks monetary disequilibrium and market clearing monetary equilibrium monetary policy monetary policy in developing countries money, fiat money, quantity theory of money and general equilibrium theory money illusion money in economic activity moneylenders money markets money supply money wages monocentric models in urban economics

monopolistic competition monopolistic competition and general equilibrium monopoly monopoly, degree of monopoly capitalism monotone mappings Montchrétien, Antoyne de (1575-1621) Monte Carlo methods Moore, Henry Ludwell (1869-1958) moral hazard moral philosophy Morgenstern, Oskar (1902-1977) mortality Müller, Adam Heinrich (1779-1829) multicollinearity multinational corporations multiplier-accelerator interaction multiplier analysis multisector growth models multivariate time series models Mummery, Albert Frederick (1855 1895) Mun, Thomas (1571-1641) municipal housing Musgrave, Richard Abel (born 1910) myopic decision rules Myrdal, Gunnar (1898-1987) NAIRU Nash equilibrium Nathan, Robert Roy (born 1908) national debt national income nationalism nationalization nationalization of land national security national system natural and normal conditions natural and warranted rates of growth natural fertility natural law natural monopoly natural order natural price natural rate and market rate natural rate of unemployment natural resources natural selection and evolution natural wage necessaries Necker, Jacques (1732-1804) Nef. John Ulric (born 1899) negative income tax negative quantities Neisser, Hans Philipp (1895-1975) Nemchinov, Vasily Sergeevich (1894 1964)'neoclassical' neoclassical economics neoclassical growth theory neoclassical synthesis neoclassical theory of distribution neoclassical theory of production neo-Ricardianism net product

Neumann, John von neutrality of money neutral taxation new classical macroeconomics Newcomb, Simon (1835-1909) Newmarch, William (1820-1882) Nicholls, William Hord (1914-1978) Nicholson, Joseph Shield (1850-1927) nominal quantities nominal wages non-basic commodities non-competing groups non-convexity non-cooperative games non-linear methods in econometrics non-linear programming non-nested hypotheses non-parametric statistical methods non-pecuniary economies non-price competition non-profit organizations non-recontracting models non-standard analysis non-substitution theorems non-tradeable goods normal conditions North, Dudley (1641-1691) North-South economic relations Novalis (1772--1801) Nove, Alexander (born 1915) Novozhilov, Viktor Valentinovich (1892 - 1970)numeraire numerical determination of the laws of utility Nurkse, Ragnar (1907-1959) nutrition O'Brien, George (1892-1973) Occam's (Ockham's) razor occupational segregation offer offer curve or reciprocal demand curve Ohlin, Bertil Gotthard (1899-1979) Okun, Arthur M (1928-1980) oligopoly oligopoly and game theory Oncken, August (1844-1911) open economy open field system open-market operations open systems operations research ophelimity Oppenheimer, Franz (1864-1943) opportunity cost optimal control and economic dynamics optimal growth optimality and efficiency optimal savings optimal tariffs optimal taxation optimism and pessimism optimum currency areas optimum population optimum quantity of money option pricing theory

options orderings Oresme, Nicholas (1325-1382) organic composition of capital organization theory Ortes, Giammaria (1713-1790) outliers output and employment overaccumulation overhead costs overinvestment overlapping generations model of general equilibrium overproduction oversaving overshooting Overstone, Lord [Samuel Jones Loyd] (1796 - 1883)Owen, Robert (1771-1858) own rates of interest Palander, Tord Folkeson (1902-1972) Paley, Mary Paley, William (1743-1805) Palgrave, Robert Harry Inglis (1827 1919)Palgrave's Dictionary of Political Economy Palmer, John Horsley (1779-1858) Pantaleoni, Maffeo (1857-1924) paper money Papi, Giuseppe Ugo (born 1893) paradigm paradoxes and anomalies paradoxes in capital theory paradox of voting Pareto, Vilfredo (1848-1923) Pareto as an economist Pareto distribution Pareto efficiency Pareto optimality Parnell, Henry Brooke (1776-1842) Parsons, Talcott (1902-1979) partial equilibrium Pascal, Blaise (1623-1662) patents path analysis Patten, Simon Nelson (1852-1922) pay-off period payroll taxes peak-load pricing peasant economy peasants pecuniary and non-pecuniary economies Pennington, James (1777-1862) Penrose, Edith Tilton (born 1914) perfect competition perfect foresight perfect information perfectly and imperfectly competitive markets performing arts period of production periphery Perlman, Selig (1888 1959) permanent income hypothesis Perron-Frobenius theorem

Perroux, François (1903-1987) Persons, Warren Milton (1878-1937) Pesch. Heinrich (1854-1926) Peter, Hans (1898-1959) Petty, William (1623-1687) Phelps Brown, (Ernest) Henry (born 1906) Philippovich von Philippsberg, Eugen (1858 - 1917)Phillips, Alban William Housego (1914 1975)Phillips curve philosophic radicalism philosophy and economics **Physiocrats** Pierson, Nicolaas Gerard (1839-1909) Pigou, Arthur Cecil (1877-1959) Pigou effect Pirou, Gaetan (1886-1946) Place, Francis (1771-1854) planned economy planning Plant, Arnold (1898-1978) plantations Playfair, William (1759-1823) pleasure and pain Plekhanov, Georgii Valentinovich (1856 - 1918)plutology Polak, Jacques Jacobus (born 1914) Polanyi, Karl (1886-1964) poles of development political arithmetic political business cycle 'political economy' and 'economics' political economy and psychology politics and economics poll taxes Pontryagin's principle of optimality Poor Law population population, optimum population cycles portfolio analysis positive economics positivism possibility theorem Postan, Michael Moïssey (1899-1981) post-Keynesian economics Postlethwayt, Malachy (1707?-1767) poverty Power, Eileen Edna (1889-1940) Pownall, Thomas (1722-1805) Prebisch, Raul (1901-1985) Prebisch-Singer hypothesis predator-prey models predatory pricing prediction preference reversals preferences Preobrazhensky, Evgenii Alexeyevich (1886 - 1937)preordering present value present value of the past

Price, Langford Lovell Frederick Rice (1862 - 1950)price control price discrimination price index price level prices and quantities prices of production primary and secondary labour markets primitive capitalist accumulation primogeniture principal and agent (i) principal and agent (ii) principal components prisoner's dilemma private property privatization probability probits producers' markets product cycle product differentiation production: classical theories production, modes of production: neoclassical theories production, prices of production and cost functions production as indirect exchange production functions productive and unproductive consumption productive and unproductive labour productivity: measurement problems produit net profit, equal rates of profit and profit theory profit-sharing profit taxes progressive and regressive taxation project evaluation proletariat propensity to consume property property rights property taxation proportional taxation protection protestant ethic Proudhon, Pierre Joseph (1809-1865) pseudo-distribution psychology and economics public choice public debt public economics public finance public goods public health public policy public sector borrowing public utility pricing public works Pufendorf, Samuel von (1632-1694) Puller, Richard pump priming punishment purchasing power of money

purchasing power parity puritanism Purves, George put and call qualitative economics quantity of capital quantity theory of money quasi-concavity quasi-contract auasi-rent Quesnay, François (1694-1774) queueing theory quotas and tariffs race and economics radical political economy Rae, John (1796-1872) Rae, John (1845-1915) Ramsey, Frank Plumpton (1903-1930) Ramsey model Ramsey pricing random coefficients randomization random variables rank rankings rank-order methods rate of exploitation rational behaviour rational expectations rational expectations: econometric implications rationalization of industry rationed equilibria rationing Rau, Karl Heinrich (1792-1870) Ravenstone, Piercy Raymond, Daniel (1786-1849) Read, Samuel (fl. 1816-29) real and nominal quantities real balances real bills doctrine real cost doctrine real income realization problem real wages reciprocal demand recontracting recoupment period recreation Reddaway, William Brian (born 1913) redistribution of income and wealth reforestation regional development regional distribution of economic activity regional economics regression and correlation analysis regressive taxation regular economies régulation regulation and deregulation Reid, Margaret Gilpin (born 1896) relative income hypothesis relativity, principle of, in political economy

renewable resources

rent

rent control rentier rent seeking reparations repeated games replacement policy representation of preferences representative firm reservation price and reservation demand reserve army reserves, free reserves, international residuals residual share resource allocation reswitching of technique retaliation retention ratio returns to scale revealed preference theory revelation of preferences revenue, gross and net reverse capital deepening rhetoric Ricardian equivalence theorem Ricardian Socialists Ricardo, David (1772-1823) Ricardo-Hayek effect Ricci, Umberto (1879-1946) rising supply price Rist, Charles (1874-1955) Robbins, Lionel Charles (1898-1984) Robertson, Dennis (1890-1963) Robinson, Abraham (1918-1974) Robinson, Edward Austin Gossage (born 1897) Robinson, Joan Violet (1903-1983) Robinson Crusoe Rodbertus, Johann Karl (1805-1875) Rogers, James Edwin Thorold (1823-1890) Roos, Charles Frederick (1901-1958) Röpke, Wilhelm (1899–1966) Roscher, Wilhelm Georg Friedrich (1817 - 1894)Rosenstein-Rodan, Paul Narcyz (1902 - 1985)Rossi, Pellegrino Luigi Edoardo (1787 - 1848)Rostas, Laslo (1909-1954) Rothbarth, Erwin (1913-1944) Rothschild, Kurt Wilhelm (born 1914) roundabout methods of production Rousseau, Jean Jacques (1712-1778) Roy, René François Joseph (1894-1977) Royal Economic Society Rueff, Jacques (1896-1978) rural economy Ruskin, John (1819-1900) Ryazanov, David Rybczinski theorem saddlepoints St Petersburg paradox Saint-Simon, Claude-Henri de Rouvroy (1760 1825)

Salin, Edgar (1892-1974) Salter, Wilfred Edward Graham (1929 - 1963)Samuelson, Paul Anthony (born 1915) sanctions Sanger, Charles Percy (1871-1930) satellite models satiation satisficing Sauvy, Alfred (born 1898) Savage, Leonard J. (Jimmie) (1917 - 1971)saving saving equals investment Sax, Emil (1845-1927) Say, Horace Emile (1794-1860) Say, Jean-Baptiste (1767-1832) Say's Law Say, (Jean-Baptiste) Léon (1826-1896) Say, Louis Auguste (1774-1840) Savers, Richard Sidney (born 1908) scarcity Schacht, Horace Greelev Hjalmar (1877 - 1970)Schäffle, Albert Eberhard Friedrich (1831 - 1903)Schlesinger Karl (1889-1938) Schmoller, Gustav von (1838-1917) Schmookler, Jacob (1918-1967) Schneider, Erich (1900-70) scholastic economic thought schoolmen Schultz, Henry (1893-1938) Schultz, Theodore Wilhain (born 1902) Schumacher, E. F. (Fritz) (1911-1977) Schumpeter, Joseph Alois (1883-1950) Schwartz, Anna Jacobson (born 1915) Schwartz, Nancy Lou (1939-1981) scientific management Scitovsky, Tibor (born 1910) Scott, William Robert (1868-1940) Scottish Enlightenment Scrope, George Poulett (1797-1876) search theory seasonal variation second best Secrétan, Charles (1815-1895) security, national security, social Seers, Dudley (1920-1983) segmented labour markets seignorage selection bias and self-selection self-interest Seligman, Edwin Robert Anderson (1861 - 1939)selling costs semiparametric estimation Senior, Nassau William (1790-1864) separability sequence economies sequential analysis serfdom Serra, Antonio (fl. 1613) services

spline functions supply curves settlement supply functions Shackle, George Lennox Sharman (born sports supply shocks in macroeconomics spot and forward markets surplus approach to value and distribushadow pricing spurious regression tion Sraffa, Piero (1898-1983) Shapley-Folkman theorem surplus value Shapley value Sraffian economics survey research stability sharecropping stabilization policy survival share economy Svennilson, Ingvar (1908–1972) Shaw, George Bernard (1856-1950) stable population theory Swedish school Stackelberg, Heinrich von (1905-1946) Shephard, Ronald William (1912-1982) Sweezy, Paul Malor (born 1910) Staehle, Hans (1903-1961) Shibata, Kei (1902 1986) stagflation Swift, Jonathan (1667-1745) Shonfield, Andrew Akiba (1917-79) tabular standard stagnation short run Tarbell, Ida Minerva (1857-1944) Stalin, Josif Vissarionovich (1879-1953) Shoup, Carl Sumner (born 1902) Stamp, Josiah Charles (1880-1941) targets and instruments Shove, Gerald Frank (1888-1947) tariffs standard commodity Sidgwick, Henry (1838-1900) Tarshis, Lorie (born 1911) Sidrauski, Miguel (1939-1968) state-dependent preferences tastes, changes in Sieber, N.I. tâtonnement and recontracting signalling state preference approach Taussig, Frank William (1859-1940) state provision of medical services Simmel, Georg (1858-1918) Tawney, Richard Henry (1880-1962) Simons, Henry Calvert (1899-1946) stationary state simple and extended reproduction stationary time series taxation statistical decision theory taxation of capital simplex method for solving linear taxation of corporate profits statistical inference programs taxation of income simulation models Steindl, Josef (born 1912) Stephen, Leslie (1832-1904) taxation of wealth simulation of microanalytic systems Steuart, Sir James (1713-1780) simultaneous equations models Stewart, Dugald (1753-1828) taxes and subsidies single tax Stigler, George Joseph (born 1911) tax incidence Sismondi, Jean Charles Leonard Taylor, Fred Manville (1855-1932) Simonde de (1773-1842) Stirner, Max (1806-1856) Taylor, Harriet (1807-1858) stochastic dominance slavery **Taylorism** Slichter, Sumner Huber (1892-1959) stochastic models stochastic optimal control teams technical change stochastic processes Slutsky, Eugen (1880-1948) Smart, William (1853-1915) Stockholm school technique, choice of technological unemployment stocks and flows Smith, Adam (1723-1790) temporary equilibrium Stolper-Samuelson theorem Smithies, Arthur (1907-1981) Stone, John Richard Nicholas (born terms of trade smuggling terms of trade and economic develop-Snyder, Carl (1869-1943) Storch, Heinrich Friedrich von social accounting term structure of interest rates (1766 - 1835)social choice Thompson, Thomas Perronet Strachev. John (1901-1963) social contract (1783 - 1869)strategic behaviour and market structure social cost Thompson, William (1785–1833) strategic reallocations of endowments social democracy Thornton, Henry (1760-1815) strategy-proof allocation mechanisms socialism Thornton, William Thomas (1813-1880) Strigl, Richard von (1891-1942) socialist economics Thünen, Johann Heinrich von strikes socialists of the chair (1783 - 1850)structural change socially necessary technique Tiebout, Charles Mills (1924-1968) structural economic dynamics social security Tiebout hypothesis social welfare function structuralism tight money structural unemployment Sohmen, Egon (1930-1977) time preference Strumilin, Stanislav Gustavovich time series analysis (1877 - 1974)Sombart, Werner (1863-1941) Tinbergen, Jan (born 1903) Struve, Pyotr Berngardovich Sonnenfels, Joseph von (1733-1817) Tintner, Gerhard (1907-1983) (1870 - 1944)sound money Titmuss, Richard Morris (1907-1973) Spann, Othmar (1878-1950) stylized facts subadditivity spatial competition Tocqueville, Alexis Charles Henri Clérel subjective probability spatial economics de (1805-1859) subsidies specie-flow mechanism Tooke, Thomas (1774-1858) specification problems in econometrics subsistence Torrens, Robert (1780-1864) substitutes and complements spectral analysis Sumner, William Graham (1840-1910) total factor productivity Spencer, Herbert (1820-1903) sunspot equilibrium town planning Spengler, Joseph John (born 1902) Townshend, Hugh (1890-1974) supergames Spiegel, Henry (born 1911) Toynbee, Arnold (1852-1883) super neutrality Spiethoff, Arthur August Kaspar

'supply and demand'

Tozer, John Edward (1806-1877)

(1873 1957)

Ward, Barbara (1914 81) trade utility maximization utility theory and decision-making war economy trade, gains from Warming, Jens (1873-1939) tradeable and non-tradeable commodities utopias Valeriani, Luigi Molinari (1758-1828) warranted growth trade cycle trade subsidies value-added tax warranted rates of growth trade unions value analysis warrants value and price waste products transactions costs transfer of technology value judgements water resources value of life wealth transfer payments transfer pricing value of time wealth constraint transfer problem Vanderlint, Jacob (died 1740) wealth effect Vansittart, Nicholas (1766-1851) transformation of statistical variables woolth taxes transformation of variables in economet-Webb, Beatrice (1858-1943) and Sidney Varga, Evgeny (Jenő) (1879-1964) variable capital (1859 1947)rics Veblen, Thorstein (1857-1929) Weber, Alfred (1868-1958) transformation problem transformations and invariance Vecchio, Gustavo del (1883-1972) Weber, Max (1864-1920) weighted least squares transformations in economics veil of money. Weintraub, Sidney (1914-1983) velocity of circulation transitivity vent for surplus welfare economics transport welfare state Triffin, Robert (born 1911) Verdoorn's Law Wells, David Ames (1828-1898) Vernon, Raymond (born 1913) Trosne, Guillaume Francoise le West, Edward (1782-1828) Trotsky, Lev Davidovitch (1879 1940) Verri, Pietro (1728-1797) Westergaard, Harald Ludvig vertical integration Tsuru, Shigeto (born 1912) Vickrey, William Spencer (born 1914) (1853 1936)Viner, Jacob (1892-1970) Whately, Richard (1787-1863) Tucker, George (1775-1861) Tucker, Josiah (1713-1799) Wheatley, John (1772-1830) vintages Viti de Marco, Antonio de (1858-1943) Whewell, William (1799 1866) Tugan-Baranovsky, Mikhail Ivanovich Wicksell, Johan Gustav Knut (1865 - 1919)Volterra, Vito (1860-1940) $(1851 \cdot 1926)$ Tugwell, Rexford Guy (1891-1979) von Böhm-Bawerk, Eugen Wicksell and neoclassical economics von Hayek, Friedrich tulipmania Wicksell effects Turgot, Anne Robert Jacques, Baron de von Mises, Ludwig Von Neumann, John (1903-1957) Wicksell's theory of capital L'Aulne (1727 1781) Wicksteed, Philip Henry (1844-1927) Von Neumann-Morgenstern utility turnpike theory Twiss, Travers (1809-1897) function widow's cruse Wiener process two-sector models Von Neumann ray Wieser, Friedrich Freiherr (Baron) von Von Neumann technology two-stage least squares and the k-class von Thünen, Johann Heinrich (1851 - 1926)estimator Williams, John Henry (1887 1980) voting unbiased technological change Voznesensky, Nikolai Alekseevich Wilson, Edwin Bidwell (1879-1964) uncertainty (1903 1950) Wilson, James (1805-1860) uncertainty and general equilibrium Wilson, Thomas (1525-1581) underconsumption vulgar economy windfalls wage flexibility undertaker Withers, Hartley (1867-1950) wage fund doctrine unemployment Witte, Edwin Emil (1887-1960) wage goods unemployment benefit Wold, Herman O.A. (born 1908) wage indexation unequal exchange women and work uneven development wage labour unintended consequences wages, iron law of women's wages Wood, Stuart (1853 1914) wages, real and money uniqueness of equilibrium wages in classical economics worker managed economies universalist economics Wagner, Adolph Heinrich Gotthelf Woytinsky, Władimir Savelievich Uno, Kozo (1897 1977) (1835 1917) (1885 1960) unproductive consumption waiting X-efficiency unproductive labour **Xenophon** (c430 BC - c355 BC) Wakefield, Edward Gibbon (1796-1862) urban economics Yntema, Theodore O. (1900-1985) urban housing Wald, Abraham (1902-1950) Young, Allyn Abbott (1876-1929) Walker, Francis Amasa (1840-1897) Ure, Andrew (1778 1857) Wallace, Alfred Russel (1823-1913) Young, Arthur (1741 1820) user cost Wallich, Henry Christopher (born 1914) Zawadzki, Władysław Marian user fees (1885 1939)Walras, Antoine Auguste (1801-1866) Usher, Abbot Payson (1884-1965) zero-profit condition Walras, Léon (1834-1910) usury zero-sum games Walras's Law utilitarianism Walras's theory of capital Zeuthen, Frederik Ludvig Bang utility (1888 - 1959)wents utility, degree of Ziber, Nikolai Ivanovich (1844-1888) Warburton, Clark (1896-1979) utility, interpersonal comparison of

coning

Contents

List of Entries A-Z	vii
The Dictionary, Volume 3	1

Kahn, Richard Ferdinand (born 1905). Kahn was the favourite pupil and closest collaborator of John Maynard Keynes, at the time when the 'Keynesian revolution' was under way (Keynes, 1936). For the whole of his academic career, he has remained associated with King's College, Cambridge (Keynes's College), where he has lived, as a bachelor, since his undergraduate days.

Kahn was born in London, on 10 August 1905, into a Jewish family of very strict religious observance. His father, Augustus Kahn, a schoolmaster, was a first generation Englishman (his parents being German), who went back to Germany to marry Regina Schoyer, Richard's mother. They had three daughters

besides Richard, their eldest son.

Richard won a scholarship to St Paul's School, London (curiously enough, Joan Robinson was educated in the girls' section of the same school). Then he won a scholarship to King's College, Cambridge, where he studied mathematics and physics, and graduated in Physics in 1927 (being placed in the second class of the Natural Science Tripos). The scholarship gave him the right to a fourth year and he took up economics, at a time of great effervescence in Cambridge intellectual circles.

He was taught economics (in 1927-8) at King's College by Keynes and Shove, and attended University lectures delivered by Pigou, Keynes, Shove, Dennis Robertson and, in the following academic year, by Piero Sraffa, the Italian economist who had just arrived at Cambridge. He obtained his university degree in Economics in June 1928 (placing himself, after only one year, in the first class of the Economic Tripos Part II), and immediately, under strong encouragement from Sraffa and Keynes, started work on a Fellowship dissertation (under the title 'The Economics of the Short Period'), which he wrote in a surprisingly short time, obtaining a Fellowship of King's College in March 1930.

'The Economics of the Short Period' (Kahn, 1929), which has remained unpublished (though a translation appeared in Italian, in 1983), is one of the two substantial works (the other being Joan Robinson's Economics of Imperfect Competition, 1933) that were stimulated in Cambridge by the devastating critique of Marshall launched by Piero Sraffa in the late 1920s (Sraffa, 1926). Richard Kahn and Joan Robinson worked very much in collaboration, under the strong influence of Sraffa and Keynes. For Kahn and Joan Robinson this was the beginning of an intense intellectual partnership that lasted for

life.

The most interesting part of Kahn's 'Economics of the Short Period' is perhaps his analysis of the extent to which - in periods of depressions market imperfections affect the way in which output gets distributed among the various firms, the essential point being that market imperfections prevent the most efficient firms from reaching an optimum utilization of their productive capacities and instead cause all firms (efficient and inefficient alike) to reach equilibrium at a point at which there is under-utilization of productive capacity at less than full employment. This sets obvious relations between the microeconomic behaviour of the single firms and the situations of under-utilization of productive capacity for the economic system as a whole.

The only part of the dissertation that reached publication in English is the treatment (part of Chapter 7) of duopoly, which Kahn re-elaborated in the form of an elegant article (Kahn, 1937) that has since become a standard reference in the economic literature on duopoly and oligopoly. But the whole of Kahn's dissertation deserves closer scrutiny. When it becomes more readily available, it may well contribute to piecing together the great analytical puzzle of the relations between Sraffa's critique of Marshall's theory of the firm and Keynes's macroeconomic theory, or, to put it in other terms, of the micro-foundations of Keynes's General Theory. It will also contribute to clarify the role played by Kahn in Joan Robinson's Economics of Imperfect Competition, whose Preface, as is well known, contains heavy acknowledgements of Kahn's help.

There can be no doubt that on a strictly intellectual level these were the most productive years in Kahn's life. It was in the summer of 1930, in the process of criticizing a paper by Keynes and Henderson on public works, that he discovered

the principle of the multiplier.

The multiplier is a relation between the increase in exogenous aggregate expenditure and the increase in net national product thereby generated (and thus also in employment, if employment is proportional to net national product and the economy is in a situation of unemployment due to lack of effective aggregate demand). If c is the fraction of any increase in income that consumers tend to spend, it can be shown that any increase of £1 of exogenous expenditure (or else of such an amount that generate 1 extra job) will finally generate £1/(1-c) of net national product (or else 1/(1-c) extra jobs). This is Kahn's multiplier. The author originally presented it in a short article with reference to employment (Kahn, 1931). It was then to be used by Keynes with reference to national income (and to the process of investments generating a corresponding amount of savings), as one of the major ingredients of Keynes's revolutionary work.

In 1930, Kahn started chairing and conducting the so-called 'Cambridge Circus', a group (or rather a closed club) of young Cambridge economists, among whom the most prominent members, besides Kahn, were Joan and Austin Robinson, Piero Sraffa and James Meade. The Cambridge Circus met regularly to discuss, criticize and propose changes to the subsequent drafts of what was later to become Keynes's

General Theory.

The exact nature and extent of the part played by Kahn in Keynes's masterpiece will remain a matter of speculation. Schumpeter's view that Kahn's 'share in the historic achievement cannot have fallen very far short of coauthorship' (Schumpeter, 1954, p. 1172) may well be exaggerated. Yet, from Keynes's acknowledgement of indebtedness to him, it can surely be argued that that part must have been very large.