Economic Journal - Summaries and Quotations competition growth, efficiency 1 mixed economy 36 criticism of E general 1 19, 20 abstract efficiency competition growth 1 growth competition efficiency 1 2f society politics & factor analysis 2f levels of development 2f 5f and cycle 17, 23-25 & neoclassical 23-25 & evolutionary growth via planning, amarket 37 models of 30 Harrod, Roy 20 income distribution 19 general wage level 9f of wage, union, inflation Kalecki 19 11-15 57.58 Kaldor Keynes Collected writings 31 Post-, introd to 29 of Harrod Kaldor Kalecki Pasinetti Robinson Kuznets 19 Marx, fundaemntal theorem 33 Mill, James (L Stephen) 16 Pasinetti 18 34f Reswitching 30 of Pasinetti Robinson, Joan on Leijonhufvod 4 on neoclassical 7f & J. Eatwell 26-28 on Pasinetti 34 f Samuelson 17 Solow, of neoclassical, Pasinetti Unions & inflation 21f 32

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M. J. Fores, "No More General Theories," Economic Journal 79 11-22

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22: There is obviously a place for the rigorous mathematical analysis of the measurable factors in economics and in the other social sciences. But/the <u>immeasurability</u> of so many of the determinants in the social sciences which is the most startling phenomenon to someone from the applied physical sciences. Especially startling is the immeasurability of so many of the determiants of economic growth, that area on which se should surely be concentrating our attention today.

Richard M. Cyert & Kenneth D. George "Competition, Growth, and Efficiency," Economic Journal 79 23-41

40: Summary and Conclusions

 Western capitalist societies have relied upon a competitive economic system to achieve the objectives of efficiency, innovation, and the passing on of the resulting gains to the society.
 There is evidence that i the structure of large sections of the United Kingdom economy is oligopolistic. In these markets we cannot assume that competition will provide an effective control mechanism.

3. Many studies have shown that internal efficiency is not at the level generally assumed in economic theory. In addition, there is evidence that much innovation is subject to managerial discretion rather than forced by the market.

4. From our knowledge of the decision-making process in firms it is evident that the efficiency of firms is improved through a search process which is invoked when firms fail to attain their goals or when it is anticipated that goals will not be attained.

5. Firms can be forced tox search more frequently than usual by a policy that induces them to set higher goals.

6. In these circumstances it is highly likely that firms can be induced to utilise research and development activities in an attempt to grow more rapidly. and particularly in an attempt to grow by diversification.

40 Footnote: E. A. G. Robinson, <u>The Structure of Competitive</u> <u>Industry</u> (CUP 1958, p. 105-6)... defines the "pessimum" size of a firm as that size which combines the technical disad**vantages of smallness with the managerial disadvantgages of being too large for individual control."

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I. Adelman & C. Taft Morris

Society, Politics and Economic Development. A Quantitative Approac Baltimore MD: Johns Hopkins Press, 1907. ix 306. London OUP. Review by David Newbery, Economic Journal 79 1909 160-163

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lol: The method used in this study is a factor analysis of some forty-one indicators of social, political and economic organisation and development for seventy-one underdeveloped countries, and although factor analysis has been used quite extensively in psychological research, this seems to be the first time that it has been used in the study of the development process in economics.

101: Countries are then grouped into three categories, each corresponding to a broad Stage of development" and characterised by certain common features. This typology of development is certainly one of the most important results obtained from the analysis and it should have fairly wide applicability.

In this long-run analysis an association was derived between <u>per capita</u> G. N. P. and two aspects of sociopolitical change: the socio-cultural concomitants of the industrialization-urbanisat, process (the first factor) and the evolution of participant political institutions (the second factor). Factor analysis is sensitive to the choice of the original variables and to the number of factors extracted, and to provide a check against spurious results the authors repeated the analysis for regional groupings of countires and confirmed the results obtained using the whole sample.

1.52: The subsequent analysis is thorough, and considers the economic, social and political forces in turn to assess the factors at work which are associated \pm with the growth of per capita income....

The countries are grouped into the three levels of development indicated in the earlier study, and it is interesting to see how the relative importance of the different factors changes from one level of development to the next. The conclusion the authors draw is that the correct policy mix will differ depending on the stage of development reached, and they illustrate this by looking at the implications for foreign assistance. Since they conclude that at low levels of development it is the growth of the market sector and the increasing dualism

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Economic Journal 79 1909 102 contd

of the economy that are the most significant factors at work, they suggest that the first priority at this level is to aid the production and marketing of cash crops. As development proceeds social tensions increase and the social structure becomes seriously unbalanced, and unless this is corrected, further development will be hindered. Thus at intermediate levels the main aim should be to adopt policies which lead to more effective government, greater political stability and a greater sense of national k unity. On the other hand, there does not seem to be any relationship between economic performance and the style of government, authoritarian or democratic.

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(BL freedom relevant to original innovation)

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page 2

A. Leijonhufvud

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On Keynesian Economics and the Economics of Keynes: A Study in Monetary Theory

New York and London: OUP, 1968. xiv 431.

Joan Robinson, Economic Journal 79 1969 581-583.

582: This book comes at a time when for many reasons the neo-neoclassicals are losing their self-confidence, and it is to be hoped that it will give them a salutary shock which will release their energies totackle the many the many urgent problems, of theory and of policy, which the Keynesian revolution opened up but which are still unsolved.

Professor Leijonhufvud treats the "British Keynesians" as some kind of quaint sect of Old Believers, who, however, preserved valuable tradition that the orthodox have lost. He suggests that we who worked with Keynes were saved from the misunderstandings rife in America because we had the benefit of oral tradition which was not made clear in the book. No doubt there is something in that, but I think that there are more important explanations, First, Kalecki brought to England his own version of the General Theory, which tightened up some loose threads in Keynes' version and brought it into relation with imperfect competitizon, supplying a missing link in Keynes' theorxy of prices. To judge by this survey, Kalecki had very little influence on American Doctrines. Secondly, we started from the concept of the Marshallian short-period situation, in which fixed pat plant, business organization, and the training of labour are all given, and can be more or less fully utilised according to the level of effective demand. A short-period supply curve relating the level of money prices to the level activity (at given money-wage rates) led straight from Marshall to the General Theory. We had no need to make a detour through the Walrasian market where all transactions are conducted in kind. Thirdly, there are political and social implications of the General Theory a good deal more //583// radical than those set out in the last chapter. Professor Leijonhufvud does not touch upon this aspect of the matter, but his survey incidentally supports the impression that the neo-neoclassical scheme was constructed to provide a shelter from dangerous thoughts, of which we did not particularly feel the need.

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S. Bober The Economics of Cycles and Growth New York & London: John Wiley, 1908. x 305. Economic Journal 79 1909 580-588 by J. C. Odling-Smee (Oriel)

587: Generally speaking, the relationships of theoretical economics are contained within those of applied economics, so that it can be argued that theoretical economics is **XNN** more basic than applied economics. But there are caskes, **XXNN** such as the rate of interest in the investment function, when a central part of a theoretical construct fails to feature in the applied context.

So what does the student make of it all? First, he gets the impression that economists are much more interested in their theoretical models, although they often admit that they are completely unrealistic, than in what actually happens. Second, when faced with the real worldx the economist defends his defaulting on his responsibility to study how it operates by citing the inadequacy of data. So the student often concludes that economists have in some sense given up with the real world economic system, and that they hope that their pronouncements about the real world based on their theoretical models will approximate to the truth. But when these models depend on assumptions, such as that factors are paid their marginal products, that there are not increasing returns to scale, that aggregate saving is a constant linear function of G. N. P., etc., it is not surprising that economists cannot predict at all accurately.....

The book is an excellent example of the dichotomy that exists between the complex multi-variable applied economics and the simple theoretical relationship.

The first quarter ixxix discusses the nature of the real world cycle, drawing heavily on the National Bureau's analytical methods. Thus the reader is introduced to reference cycles and specific cycles, to leading and lagging indicators, to the cycle as a consensus ("an economic system is composed of a multitude of time time series, which give information about the direction of economic activity"), and to the diffusion index...

.. two KR chapters on consumtion and investment. Although the publishers' blurb says that ink these two chapters "the basis of theory in empirical data is always clearly demonstrated," it is not obvious to the reveiwer that this is so. (presentation of a variety of models: three different types)

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Economic Journal 79 1909 588 S. Bober p. 2

588: Who will benefit from this book? Any student who has done an elementary macroeconomics course and wants to follow up with models of cycles and growth would find the relevant two chapters a useful starting point, although possibly not much more useful than going back to the original articles would be. Alternatively, someone interested in National Bureau techniques could quickly get an idea as to what they are about by reading the first quarter of the book. But anyone interested in the economics of cycles and growth in the sense of understanding the cyclical changes that actually take place will be frustrated by the lack of interplay between the applied and the theoretical sections. As the author pessimistically says: "We must continue to be aware that the cycle is too complex a phenomenon to permit us to see 'into' the change by using a model that squeezes the many and diverse forces into few stex select variables," The sad thing is that economists, including manny much more eminent than Bober, continue to be defeatist in this way about the possibility of understanding the real world, and gladly retreat into their warm, theoretical wombs, where they are not threatened by facts. What is needed is a reallocation of economic brain-power towards the analysis and interpretation of the real world. Econometrics attempts to bridge the gap and as Bober says in his brief final chapter on econometrics, the restructuring of models that may be necessary when they are confronted with the facts "reflects our increasing knowledgen both in terms of theoretical and empirical formulation." One wishes that he had undertaken some restructuring kinskif instead of wasting time on churning out well-known and useless theoretical tricks. (end)

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Economic Journal 80 1970 336 - 339 Joan Robinson on Neoclassical Theory Review of

C. E. Ferguson, The Neoclassical Theory of Production and Distribution, London: Cambridge U. P., 1969. xviii 384. 90/-

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This follows immediately on quote from 337 on next sheet.

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337: The full neoclassical parable (as distinct from Samualson's surrogate production function) is as follows. There is a mysterious substance, let us call it leets, measured in tons, which is used in conjunction with labour to produce output. There is a wellbehaved production function in leets and labour for every kind of output, including leets. There is no distinction between the past and the future. An investment of leets, once made, can be squeezed up or spread out into a new form, instantaneously and without cost, if it becomes profitable to do so.

What is still more remarkable, leetas can absorb technical progress without changing its identity, xk again instantaneously and without cost, so that new invenstions raise the output from a ton of leets, without any investment being required.

All at this has been very candidly spelt out by Professor Meade. (In the first edition of <u>A Neoclassical Theory of Economic</u> <u>Growth</u> he refers to what I have called lects as "steel"). It is the essence of Professor Ferguson's concept of "capital."

The most important feature of this system is that a given quantity of "capital" will always provide full employment for the available labour force. If there unemployment, competition for jobs wpiuld drive down wages; when there is excess demand, competition for hands drives them up. "Capital" is spread out or squmeezed up accordingly so that full employment is always guaranteed.

Perhaps it is unfair to describe this system as neoclassical; Walras, Marshall and Wicksell, each oaccording to his lights, was trying to grapple with the problem of capital, not running away from it. The system might be called pre-Keynesian theory after Keynes. It expresses the dogma that was orthodox at the time of the great slump of the thirties, that unemployment can be due only to wages being toohigh. This doctrine was not then clearly stated. Keynes had to formulate it in order to attack it. Only now, long after it was demolished, latter-day neoclassicals have set out the assumptions on which it must have been based.

The origins of these notions is to be found in the manner in which // 338 // orthodoxy was reconstituted after the Keynesian

Economic Journal 80 1970 338 con'd J Robinson on Neoclassical theory.

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[338] revolution. The latter-day neoclassicals evidently failed to notice that there were two quinte different strands of thought in the old doctrines. In the Walrasian system the "factors of production" are a set of specific physical inputs whose prices are derived the from the prices, determined by supply and demand, for the goods they can be combined to produce. In Marshall's long-run theory there is anormal rate of profit; the normal prices of all goods, outputs and inputs, are determined by cost of production, including profit at the normal rate on the value of capital directly and indirectly required to produce them.

The first part of Professor Ferguson's book is purely Walrasian. It sets out a number of propositions in terms of physical inputs and outputs. He does not notice that the psexudo-production function (whether well or ill behaved) belongs to another line of thought. His faith is that labour and capital can be treated as two inputs, each homogeneous with xitestfy within itself, whose relative prices are determined by demand and supply of their services, like any Walrasian factors.

However, he is quite prepared to admit that capital equipment is not really composed of a homogeneous physical substance, and he brings the vintage model into the arguemnt to deal with technical prgress which requires new kinds of equipment to be constructed. We can then see that, without leets, his system does not stick together.

337: .. Suppose that for any one technique, the capital-labour ratio is uniform throughout all the process of production, so that labour-value prices prevail. The value of a stock of capital equipment is then proportional to the "klabour embodied in it," and so is independent of the rate of profit. If all techniques are of this nature, then a higher value of capital, at every point in the pseudo-production function, is associated with a higher output per man. This was the case that Samuelson chose for his surrogateproduction function.

The mistake was to suppose that labour-value prices are sufficient to provide the "neoclassical parable." The neoclassics cannot be satisfied with a pseudo-production function in terms of value of capital. They a need a production function for which "capital" is a physical input. /produced

[Hence the point to leets: is capxital that does not have to be

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Economic Journal 80 1970 827-849 H A Turner and D A S Jackson On the Determination of the General Wage Level....

Our data would apparently fit a simple "wage-leadership/costinflation" model for the world as a whole. This would x derive from three well-annotated phenomena. First, that where productivity is rising, firms find it easier (for a variety of reasons which have been too well canvassed in other places to go into here) to concede demands for wage increases than to reduce prices. Second, that wage increases in one trade or industry tend to stimulate pressures for similar increases in other branches. Third, that where wage increases exceed productivity growth, the difference is usually passed on by employers to prices.

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In sum, our analysis and comparison of wage and price movements in the industrial "market" economies and int the "modern sector" of the less developed countries suggest that three trends are common to both groups of economies. Average money wages tend to rise at a rate corresponding approximately to the normaly pace of prductivity growth in those industrial branches where this pace is naturally fastest. Average retail prices tend to increase, of course, at a rate roughly equal to the difference between the rates of money wage increase and of average productivity growth. And average real wages tend to rise at a pace equal tothat of average productivity growth (in the economy as a whole for the advanced countries, and in the modern industrial sector for the underdeveloped economies) itself. Since productivity growth factors are largely influenced by universal technological factors, these three rates tend, again, to be identical for economics of different types.

In the model that best fits the data of this study, the major immediate determinant(of wages) is institutional behaviour --the behaviour of **EMPERSYNCEXE** employing and workers' organizations, and to some degree that of governments.

It would seem that... Hicks was right... in suggesting that the world was now on a Labour Standard... But it equally appears that the Labour standard is not a Minimum but an Escalator...

In the poor countries however these mechanisms generally involve a continuing widening of.. the gap between living standards in the urban modern sector and in the traditional mainly rural

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society. // will swell the labour surplus itself. So far from being absorbed, the increase in the labour force produced by the less developed world's fast population growth /.

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Economic Journal 80 1970

840 Qualifying 839

But if the degree of wage-push were particularly strong (as it might well be, in terms of our model, if productivity growth in the "leading branches" were unusually fast), but the restraints on price increases arixsing from world competition were also pretty effective, then it could happen that real wages would gain at the expense of other incomes from wage-and-price inflation. Such an event would be consistent with our data, as far as that goes -- and with our model, since again all this suggests is that resistance to such redistributive wage pressure will be weaker if that pressure does not reduce the share of profits in branches of faster productivity growth.

BL ie all the model suggests is that redistributive wage pressure is effective as long as it does not lessen the share of profits among the set of faster but unequally faster growing enterprises productivitiy-wise.

847 n 2: In Britain and Holland, biasing pay movements **twm** towards industries with faster productivity growth did not break the pattern of uniform or similar wage increases but brought about an actual acceleration in the rate of wage inflation (reworded by BL)

per annum 848 Average percentage increase in recorded unemployment in less developed countries 8½% from late 1950!s in 14 countries 19% in 1905 in20 countries 20% in 1905 in 24 countries 16% in 1907 in 10 countries (recast and reworded by BL)

848 In such countries, however, open unemployment is largely an urban phenomenon, the growth of which is a function of several pressures. These include low marginal productivity in traditional agriculture -- from which earnings thus contrast unfavourably with even an odds-against chance of an urban job; the attractive power of an increasing urban "relative real wage"; the effects of extending (if still often selective) primary education, which makes its possessors reluctant to return to a rural environkment; the growing cultural and xx social service advantage of town over country in poor economies; and so on.

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Nicholas KALDOR (King's College, Cambridge, June 1972) "The Irrelevance of Equilibrium Economics" (The Goodricke Lecture delivered in the University of York, May 10, '7:

Economic Journal 82 (1972) 1237 - 1255

1237: I should therefore make it clear that the notion of equilibrium to which I refer is that of the general economic equilibrium originally formulated by Walras, and developed, with ever increasing elegance, exactness, and logical precision by the mathematical economists of our own generation, of whom perhaps the French economist, Gerard Debreu is now regarded as the most prominent exponent.

Reference to his <u>Theory of Value, An Axiomatic Analysis</u> of <u>Economic Equilibrium</u>, Cowles Foundation Monograph, No. 17, New York 1959.

.. in the strict sense, as Debreu says, the theory is "logically entirely disconnected from its interpretation." It is not put forward as an explanation of how the actual prices of commodities are determined in particular economies or in the world economy as a whole. By the term "explanation" Debreu means a set of theorems that are logically deducible from precisely formulated assumptions; and the puxrpose of this exercise is to find the minimum "basic assumptions" necessary for establishing the existence of an "equilibrium" set of prices (and output/input matrices) that is (a) unique, (b) stable, (c) satisfies the conditions of Pareto optimality. "The whole progress of mathematical economics ** [Samuelson 460n: Named after Vilfredo Pareto, an equilibrium is said to be "Pareto-optimal" if (and only if) there is no possible movement from it that could make everyone better off.]

in the last thirty to fifty years / 1238 / lay in clarifying the minimum requirements in terms of "basic assAumptions" more precisely: without any attempt at verxifying the realism of those assumxiptions, and without any investigation of whether the resulting theory of "equilibrium prices" has any explanatory power or relevance in relation to actual prices.

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N KALDOR Econ Journ 82 1972

1240: In fact, equilibrium theory has reached the stage where the pure pure theorist has successfully (though perhapts inadvertently) demonstrated that the main implications of his theory cannot possibly hold in reality, but has not yet managed to pass his message down the line to the textbook writer and to the classroom.

Yet without a major act of demolition -- without destroying the basic conceptual framework -- it is impossible to make any real progress. There is, I am sure, a vague sense of dissatisfaction, open or suppressed, with the current state of economics among members of the economic profession -- as is evidenced, for example, by recent Presidential addresses to the Royal Economic Society and to section F of the British Association.**

** E H Phelps Brown & G. D. N. Worswick Econ Journ 1972 9-20 73-80 On the one hand it is increasingly recognized that abstract mathematical models lead nowhere. On the other hand, it is also recognized that "econometrics" leads nowhere -- the careful accumulation and sifting of statistics and the development of of refined methods of statistical **EXXAMMENT** inference cannot make up for the lack of any basic understanding of how the actual economy works. Each year new fashions sweep the "politico--economic complex" only to disappear again with equal suddenness....

1240 Where Economic Theory Went Wrong

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The difficulty with a new start is to pinpoint the critical area where economic theory went astray. In my own view, it happened when the theory of value took over the centre of the stage -- which meant focusing attention on the <u>allocative</u> functions of markets to the exiclusion of their <u>creative</u> functions -- as an instrument for transmitting impulses to economic change.

To locate the source oferros with moreprecision, I would put it in the middle f of the fourth chapter of Vol. I of the Wealth of Nations

1241: But in the following (fourth) chapter, after discussing the need for money in a social economy, Smith suddenly gets fascinated by the distinction between money price, real price, and exchange value and from then on, hey presto, his interest gets bogged down in the question of how values and prices for products and factors are determined. One can trace a more or less

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N KALDOR Econ Journ 82 1972 1241 con'd

less continuous development of price theory from the subsequent chapters of Smith through Ricardo, Walras, Marshall, right up to Debreu and the most sophisticated present-day Americans.

** Piero Sraffa, "The Law of Returns under Competitive Conditions," <u>Economic Journal</u> 36 1926 535 argued that Marshall was mistaken in attempting to accomodate within the same analytical framework both increasing and decreasing returns to scale.

1241: 2 .. the general equilibrium school (as distinct from Marshall) has always fully // 1242 // recognised the <u>absence</u> of increasing returns as one of the basic "axioms" of the system. As a result, the existence of increasing retrurns and its consequences for the whole framework of economic theory have been completely neglected.

III. The Dominating Role of Increasing Returns (1242-1244)

Allyn Young, "Increasing Returns and Economic Progress," Economic Journal, December 1928, pp. 527-542.

Originally Presidential Address to Section F of the British Association in 1928.

Samuelson 773: In dynamic economic development, however, the phenomenon of increasing returns is to be expected. Smith's <u>The Wealthof Nations</u> was in its day a manual of economic development. Smith stressed the advantage of <u>large-scale division</u> <u>of labor</u>. It is a case of the whole bein g begger than its parts: If all factors together can be increased in size, product will grow more than proportionally.

Samuelson 25: .. \mathbf{x} the law of diminishing returns refers to the dimishing amount of extra output that we get when we successi ely add equal extra units of varying input to a fixed amount of some other input.

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Compare: emergent probability, McShane on Randomness..., Bertanalfy, etc.

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Nicholas Kaldor, Econ Journ 82 1972 1243 con'd

1243: The consequences of abandoning the axiom of "linearity" and assuming that, in general, the production of any one commodity, or any g one group of // 1244 // commodities, is subject to increasing returns to scale, are very far-reaching. The first and most important casualty is the notion of "general equilibrium" as such... .. in other words that whatever the initial situation, the system will converge on a <u>unique point</u> the exact nature of which, both as regards the x price system and the output system, can be deduced from the x "data." Continuous economic change on these assumptions can only be conceived as some kind of "moving equilibrium" through the postulate of an autonomous (and unexplained) time-rate of change in the exogenous variables of a kind that is consistent with "continuous equilibrium" through time....

See James Mill as reported by Leslie Stephen, <u>The English</u> Utilitarians

The model is Newtonian deduction!

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IV. The Theorem of Endogenous and Cumulative Change (1244-46)

1244: As Young put it, with increasing returns "change becomes progressive and propagates itself in a cumulative way." Further, "no analysis of the forces amking for economic equilibrium... will serve to illumine the field, for movements away from equilibrium, departures from previous trends, are characteristic of it."

1245: The whole issue, as Young said, is whether an "equilibrium of costs andadvantages" is a meaningful notion in the presence of increasing returns. When every change in the use of resources -- every reorganisation of productime activities -- creates the opportunity for further change which would not have existed otherwise, the notion of an "optimum" allocation of resources -- when every particular resource makes as great or greater contribution to actual output in its actual useas in any alternative use -- becomes a meaningless and contradictory notion: the pattern of the use of resources at any one time can be no more than a link in the chain of an unending sequence and the very distinction, vital to equilibrium economics, between resource-creation and resource-allocation loses its validity. The whole view of the economic process as a medium for the "allocation of scarce means between alternative uses " falls apart -- except perhaps for the

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Nicholas Kaldor, Econ Journ 82 1972 1245 con'd

consideration of short-run problems, where the framework of social organization and the distribution of the major part of available "resources," such as durable equipment and trained //1246, or educated laboutr, can be treated as given, as a heritage of the past, and the effects of current decisions on future development are ignored.

V. The Role of Demand and the Two Kinds of "Induced Investment" 1250: And it requires above allX a monetary and banking system that enables capital investment to increase in response to inducements, so as to generate the savings required to finance additional investment out of the <u>addition</u> to production and incomes. This is the real significance of the invention of paper money and of credit creation through the banking system.

1250: resumé

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induced by excess supply: futures, stocking up on products of farm and mines, in anticipation of better prices later on induced by excess demand: manufacturer responding to

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reduced stocks, growing order book

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To appreciate Mill's position, it is necessary briefly to notice the prejudices which he had to encounter and the sympathies with which he could reckon. Political economy had been exultant in the days of James Mill. He and his allies were entering the promised land. They took the science to be in the same stage as astronomy just after the publication of Newton's <u>Principia</u>. The main truths were established, though prejudice and sentiment still blinded the outside world to the clearest demonstration. The Utilitarians were, and knew themselves to be, bitterly hated; though they took the hatred to be an unconscious tribute to their real authority -- the homage of the stupid to irresistible logic.

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Leslie Stephen, The English Utilitarians, III, 163. New York: Peter Smith, 1950. Bapst B / 1571 / S85 / 1950

Cf. Paul Hazard, The European Mind, London 1953. B. L., A Second Collection, p. 57.

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Samuelson 747

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Trends 4 and 5, however, warn us that neoclassical theory cannot hold in <u>static</u> form! A steady profit rate (trend 4) and a steady capital-output ratio (trend 5) are incompatible with the more basic law of diminishing returns under deepening of capital. We are forced, therefore, to introduce <u>technical innovations</u> into our statical neoclassical analysis to explain these dynamic facts. And a good thing it is that we are told to introduce technical change, since we have much independent evidence of the importance of science and engineering in the modern era.

Luigi L. Pasinetti (King's College, Cambridge)

L. L. P., "Rate of Profit and Income distribution in Relation to the Rate of Economic Growth, <u>Review of Economic Studies</u>, 29 (4) 2x7x277x 1962 207-279

L. L. P., "Changes in the Rate of Profit and 'Degree of Mechanization': A Controversial Issue in Capital Theory," presented at the First World Congress of the Economic Society in Rome, September 1965.

L. L. P., "Switches in of Technique and the Mate of Return' in Capital Theory," <u>Economic Journal</u>, September 1969, pp. 508 531.
L. L. P., "Reply to Mr . Dougherty," <u>Economic Journal</u> 82 1972 1351 f
C. R. S. Dougherty, "On the Rate of Return and the Rate of Profit," <u>Economic Journal</u> 82 1972 1324-1350. (D is King's College, Cambridge Ian Steedman (Un of Manchester), "The State and the Outcome of the Pasinetti Process," Economic Journal 82 1972 1387-95.

J. E. Meade, "The Outcome of the Pasinetti Process: A Note," <u>Economic Journal</u> 76 1966 161-5. Steedman generalizes Meade.

Samuelson, P. A., and Modigliani, F., "The Pasinetti Paradox in Neoclassical and more General Models," <u>Review of Economic</u> Studies 1906 269-301.

J. V. Robinson, " Comment on Samuelson and Modigliani," <u>Review</u> of Economic Studies, 1966-307-8.

Samuelson and Modigliani, "Replay to Pasinetti and Robinson," Review of Economic Studies 1966 321-30.

D M G Newbery's review of Mirrlees & Stern (eds) Economic Journal 84 1974 404 f.

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