

Thirlwall, A.P.

**Working Paper**

## Charles Kennedy 1923-1997: An Appreciation

Department of Economics Discussion Paper, No. 9815

**Provided in Cooperation with:**

University of Kent, School of Economics

*Suggested Citation:* Thirlwall, A.P. (1998) : Charles Kennedy 1923-1997: An Appreciation, Department of Economics Discussion Paper, No. 9815, University of Kent, Department of Economics, Canterbury

This Version is available at:

<https://hdl.handle.net/10419/105522>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

## **CHARLES KENNEDY 1923-1997: AN APPRECIATION**

A. P. Thirlwall

September 1998

**Correspondence Address:** Professor A P Thirlwall, Department of Economics, Keynes College, University of Kent at Canterbury, Canterbury, KENT CT2 7NP. email: A.P.Thirlwall@ukc.ac.uk; tel: +44 (1)227 827414; fax: +44 (0)1227 827850.

## CHARLES KENNEDY 1923-1997: AN APPRECIATION<sup>1</sup>

Charles Kennedy, Honorary Professor of Economic Theory at the University of Kent at Canterbury, died from a pulmonary haemorrhage at his home on 4th November 1997, aged 74. Kennedy was one of the finest economic theorists of his generation. He made powerful contributions to several branches of economics, but he will be best remembered, perhaps, for his pioneering work in growth and distribution theory, with his invention of the innovation possibility frontier and the inspiration he gave to Sir John Hicks to write Capital and Time. Kennedy served on the Council of the Royal Economic Society from 1976-79, and with the astute eye of the investor (which he exercised all his life) took out life membership of the Society early in his career in 1947. ‘The best investment I ever made’ he always used to tell me.

I had the privilege of being Kennedy’s colleague and friend for over thirty years. We both arrived at the University of Kent in the academic year 1966-67, one year after the University’s foundation, and soon formed a close personal and academic relationship. His intuition was one of the deepest, and his mind one of the sharpest, I have ever encountered; at the same time, he was the gentlest and kindest of men without rancour or malice. He was interested only in ideas, not in personalities, petty politics or point-scoring. He did not find writing easy, and was not prolific by modern standards, but nonetheless published nearly fifty papers, almost thirty of which appeared either in the Economic Journal, Review of Economic Studies or Oxford Economic Papers, which is some measure of their quality.

No one who met Kennedy could help but be charmed and fascinated by his company, his bohemian demeanour, and his many endearing idiosyncracies, one of which was his

---

<sup>1</sup> I am very grateful to Professor J. Craven, Dr. J. Faria, Dr. G. Harcourt, Mr. P. Oppenheimer and Professor Paul Samuelson for reading, and commenting on, a first draft of this article.

phobia of libraries. Entering a library alone completely traumatised him; he had to be accompanied and even then felt extremely uncomfortable. This partly accounts for the fact that he read relatively little, but it had the enormous advantage that it was easier for him to think, and to work out things from first principles, unencumbered by the vast verbiage that most academic economists feel compelled to absorb.

Kennedy was born in 1923 into an artistic and musical family, with strong roots in Donegal and Cornwall, the youngest of five sons. Both of his grandfathers were painters. On his father's side, Charles Napier Kennedy was a distinguished portrait painter, while on his mother's side, Thomas Millie Dow was one of the 'Glasgow Boys' and a founder of the St Ives School. His father, George Kennedy, was a well-known architect who specialised in the restoration of private houses and mixed on the fringes of the Bloomsbury Group. He was a contemporary of Keynes at Eton and was Keynes's favourite architect. Keynes commissioned him to design, among other buildings, the Arts Theatre in Cambridge, and to renovate part of his own house at Tilton in Sussex.

Kennedy was educated at Gordonstoun public school in Scotland, renowned for its emphasis on character-building through sport and pursuit of the creative arts. He became an accomplished cellist and enjoyed painting all his life. He was altogether a precocious boy, gifted at mathematics, and at the tender age of seventeen gained entrance to Balliol College Oxford to read Philosophy, Politics and Economics with Thomas (later Lord) Balogh as his tutor. In two years he graduated with first class honours and was recruited straightaway into the Prime Minister's Statistical Section of the war-time government as an Assistant Statistician working under Lord Cherwell.

When the war ended, he opted for the academic life. One year was spent as Assistant Lecturer in Economics at University College, London (1946-47), and another year as Lecturer in Economics at Balliol College, Oxford (1947-48). Then in 1948, Queen's College, Oxford

elected him as its Fellow in Economics to succeed Charles Hitch. He was the youngest candidate but had glowing references from a number of Oxford economists who had taught and known him. Two years later he was appointed to a University Lectureship in Oxford where he remained until 1961. During this period, his writing and research interests largely reflected those of his illustrious Oxford contemporaries: the welfare economics of Ian Little, and the growth economics of Roy Harrod and John Hicks.

By all accounts he was a relaxed and inspiring teacher. Two of his star pupils were (Sir) James Ball and Peter Oppenheimer. The latter writes affectionately in The Queen's College Record (December 1997):

‘My own recollections of Charles as a tutor centre on his college rooms --. Charles, clean shaven in those days, would stand by the mantelpiece, or periodically stroll about the room, endlessly relighting a virtually empty pipe, and interspersing his efforts with cryptic, often slightly teasing, comments about the piece of economic literature under discussion. He taught with a light hand, helping one to explore puzzles rather than signalling the blatant gaps in one's understanding. Of course most of the puzzles had been explored regularly over the previous decade or more. But as the solutions, even at a theoretical level, remained in doubt, the explorations were still genuine. Likewise, when it came to examinations. “One sets questions to which one would like to know the answers” was a favourite quip’.

During most of his time in Oxford, Kennedy led a bachelor existence. His special friend was the distinguished Hispanist, (Sir) Peter Russell, also a Fellow of Queen's. They often took holidays together, and Kennedy would paint; and it was a cruise to the West Indies in 1955 that proved to be a turning point in Kennedy's life. As Peter Russell wrote in his moving obituary in The Independent newspaper (27th November 1997): ‘his painter's vision was entranced by the light and colour of the tropical island landscapes and buildings and he found he had an unexpected empathy with the West Indians and their culture’. Six years later, the memories of that experience, and subsequent return visits, induced him to leave Oxford for a Chair of Economics at the University of the West Indies where his interests in economics

also widened to embrace economic development and open economy macroeconomics, as I shall describe later.

Before he left for the West Indies, however, his life had already changed dramatically when on a Mediterranean cruise with Peter Russell he met a Somerville chemistry graduate, Ann Cullis, working with Max Perutz's team in Cambridge on the structure of haemoglobin. Reminiscent of Keynes and Lydia Lopakova, and at roughly the same age, a whirlwind romance developed and within a few months the couple were married. Events such as these are important in understanding a scholar's life. While some, like Bertrand Russell, seem to have thrived intellectually on personal friction (like grit in the proverbial oyster), for most it is emotional stability that is conducive to clear thought and productivity. This, I believe, to have been true of Keynes (and also Kaldor<sup>2</sup>), and was certainly true of Kennedy. He had published only one paper since 1955, but then, from 1960 on, there was a whole spate ranging over a wide spectrum (see bibliography).

The five years he spent in the West Indies, raising a family of three sons and one daughter - all subsequently educated at Oxford or Cambridge - were the happiest of his life. He became friendly with (Sir) Arthur Lewis, the Vice-chancellor, and for a short period Kennedy was his Deputy. He also served as a Director of the Bank of Jamaica. Political events in the West Indies, however, made life difficult for expatriates, and there was little choice but to leave. Having signalled his intention to return to the UK, several Universities showed interest in appointing him, but he was finally attracted to the foundation Chair of Economic Theory at the new University of Kent, located in the historic city of Canterbury, with its collegiate structure reminiscent of Oxbridge. Although for personal reasons he officially

---

<sup>2</sup> See my biography of Kaldor (Thirlwall, 1987).

retired after four years at the age of forty-eight, he continued to teach part-time until 1984, and carried on research and writing till his death.

In the mid-1970s, however, his intellectual interests switched from the mainstream topics of growth theory, capital theory and technical progress, to which he had contributed so much, to inflation accounting and the theory of finance. Like Keynes in his capacity as Bursar of King's College, Cambridge, Kennedy's financial acumen made a substantial difference to the finances of the University of Kent as well as his own family finances, allowing him to live comfortably in retirement. He was also extremely generous in his advice to others. For his services to the University of Kent, he was awarded an Honorary Degree of Doctor of Letters in 1984.

### **Contribution to Economics**

Kennedy's first two published papers appeared in the Review of Economic Studies in 1948 and 1949 on the topics of 'Period Analysis and the Demand for Money' [1] and 'Devaluation and the Terms of Trade' [2]. They bore little relation to his subsequent interests (although he did write various essays on monetary policy [4] [5] [18]), but they reveal in print for the first time his incisive theoretical mind, as well as his ability to handle and manipulate complex formula. His extension of Joan Robinson's condition for devaluation to deteriorate the terms of trade - giving a new expression containing sixteen terms - is a virtuoso piece in this regard.

His major contributions to economics can be conveniently discussed under the five heads of welfare economics; growth and capital theory; technical progress and distribution; development theory and open economy macroeconomics, and inflation accounting and the theory of finance.

## **Welfare Economics**

Kennedy's first foray into welfare economics, and his first reference to the work of Paul Samuelson who, it is well known, had high regard for Kennedy as an economic theorist, was a paper on the 'Common Sense of Indifference Curves' [3] in which he objects to Samuelson's claim that deriving indifference curves by the budget line technique is superior to the index number approach developed by Samuelson (1947) in his Foundations of Economic Analysis. This was 1950, the year in which Ian Little's A Critique of Welfare Economics first appeared, to which most of Kennedy's subsequent writing in this field was directed. He set out to expose inconsistencies and fallacies in Little's use of distribution criteria for the determination of a welfare improvement and to seek a common criterion by which all comparisons can be made.

It was Kaldor and Hicks in 1939 who ushered in the new welfare economics with their idea of hypothetical compensation tests as a reaction to the Paretian nihilism that it is impossible to say anything scientific or positive about an economic change if it makes some people worse off at the same time as it makes others better off because individual utilities cannot be compared. But as Little argued in his Critique, compensation tests alone take the heart out of welfare economics because they ignore distributional considerations. A change might satisfy both the Kaldor and Hicks criterion (or Scitovsky's (1941) reversal test), but an actual welfare loss is still possible because at the margin a pound loss to the poor is greater than a pound loss to the rich. Little's natural solution was to say that state B is superior to state A if either the Kaldor-Hicks test or the Scitovsky reversal test is met, provided the distribution of income is no worse in B than in A. Apart from the difficult question of how the distribution of income should be measured, Kennedy showed [6] that the application of Little's dual criteria could yield contradictory results. A movement from A to B might meet the dual criteria, but this result might also be consistent with a subsequent movement back



from B to A also meeting the Scitovsky test in which the distribution of income in A appeared better than in B. In fact, the Scitovsky test is shown to be redundant in these circumstances, which is a useful demonstration in itself since the condition may often not be met. The debate was given a new lease of life when James Meade (1959) reviewed the second edition of Little's Critique, and there appeared an exchange of notes on welfare criteria in the Economic Journal (March 1962) in which Mishan (1962) was prominent. Kennedy [19] strongly attacked Mishan for using Little's dual criteria separately and for saying, in effect, that if A is superior to B on one criterion, and B is superior to C on the other criterion, then A is superior to C. The procedure is invalid because either it leads to inconsistencies (as Kennedy had tried to point out in 1952) or, if inconsistencies are ruled out by further restrictions, it is unnecessary because it can be replaced by the use of a common criterion for all comparisons that 'there is a social improvement if the distribution of welfare is better and everyone is not made worse off'. With an amusing parable [20], commenting on Amartya Sen (1963), Kennedy wrote to Mishan that he was retiring from the welfare debate for the same reason as Kaldor had done many years before, namely that nothing positive can be said in welfare economics without making explicit value judgments about the income distribution. In the same field, however, Kennedy was proud to have provided the first general rigorous proof that the aggregate index number criterion  $\sum P_2 Q_2 > \sum P_2 Q_1$  entails the Scitovsky criterion that no reallocation of the quantities in the first situation could make every individual as well off as he is in the second situation (see [8]).

### **Growth and Capital Theory**

Apart from a useful pedagogic piece [13] giving a diagrammatic representation of the various growth models of Harrod, Hicks, Kaldor and Joan Robinson, Kennedy's first major contribution to growth theory came in a paper in 1961 on 'Technical Progress and Investment'

[15] in which he asks the question ‘does a steady growth of output which comes about as a result of (Harrod) neutral technical progress in the consumption sector require additions to capital in the form of new investment’? The orthodox answer is, of course, ‘yes’, but if the value of capital must rise as output rises, it could rise either as a result of an increase in volume (investment) or a rise in the price of capital goods. Does neutral technical progress require additions to the capital stock or merely an appreciation in the value of the capital stock? Kennedy showed rigorously that the answer depends on assumptions about depreciation and obsolescence. In the case of technical progress with no depreciation or obsolescence, progress can take place as a result of the invention of new methods of using existing machines, and in this case no new investment is required. With depreciation and obsolescence, the answer depends on how depreciation and obsolescence are measured. Technical progress in the investment sector is then considered. This introduces complications because it reduces the cost of machines and therefore has a capital-saving effect on the economy as a whole. Technical progress in the consumption goods sector must therefore be capital-using if technical progress is to be neutral for the economy as a whole. This clearly requires some net investment.

In the same issue of the Economic Journal, Harrod (1961) published an article on ‘The “Neutrality” of Improvements’ and Kennedy recognised for the first time that the Harrod and Hicks definitions of neutral technical progress are the same provided they are applied to a single improvement or to a model of the whole economy where technical progress takes place only in the consumption sector. His famous one-page paper which shows this [16] elicited an immediate Note from Samuelson claiming Kennedy to be wrong; that the two definitions are only the same in the Cobb-Douglas case which had been recognised for a long time. There followed a protracted correspondence with Kennedy claiming Samuelson to be mistaken because he interpreted Harrod’s measure of the capital-output ratio in physical terms whereas

Harrod measures capital in the same units as output. In the case where technical progress takes place only in the consumption goods sector, the price of machines will rise in terms of output since technology in the production of machines has not altered. Samuelson eventually conceded that Kennedy had ‘a valid point’, and withdrew the Note he had written for consideration for publication in the Economic Journal.

On the basis of Samuelson’s confusion, Kennedy amended an impending article already submitted to the Economic Journal on the ‘Character of Improvements and Technical Progress’ [17] in which he analyses further the case in which technical progress takes place in the investment sector as well. A multi-sectoral model is used in which the consumption good can also be used as a capital good. He shows again that Harrod and Hicks neutrality are the same if the character of a single improvement alone is considered, but this equivalence does not hold for the economy as a whole because an improvement in the investment sector alters the relative cost of labour and capital in the sector using the machine, and therefore the new capital-output ratio in the sector will depend on the elasticity of substitution of machines for labour. Kennedy’s insistence on the importance of distinguishing between technical progress in the consumption and investment sectors was a central and distinctive feature of his work, and helped to clarify several debates in growth economics.

Throughout his academic life Kennedy had a close association with Hicks. Kennedy was nineteen years younger, but they were contemporaries in Oxford and the young Kennedy took a great interest in Hicks’s work, absorbing the ideas contained in The Theory of Wages and Value and Capital. They started to correspond in 1950, and regularly exchanged papers with each other. Kennedy’s Festschrift paper for Hicks on ‘Time, Interest and the Production Function’ [29], in which he is critical of Chapter 12 of Hicks’ Capital and Growth (1965), was the one that prompted Hicks to write ‘A Neo-Austrian Growth Theory’ (1970) and then his famous book Capital and Time (1973) in which he writes ‘the work which has gone into the

present book took its origins from reflection upon the consequences of the criticisms made [by Kennedy of Capital and Growth].

Kennedy criticised Hicks's model in Capital and Growth on the grounds that the price equations implicitly assume an unlagged production function because the price of goods is simply made equal to the cost of hiring factors of production to produce them. There is no cost of 'waiting' included. Yet the quantity equations implicitly assume a lagged production function (and rightly so because in the case of capital goods, the unlagged case would imply that capital goods produced during a period can themselves be used in the production of output of the period which is implausible, to say the least). To make the model consistent requires that the price equations are adapted to a lagged production function with the cost of 'waiting' included through the rate of interest. The consequence of the consistent treatment of the price and quantity equations turns out to be that the strict duality between them is lost. As Kennedy put it 'Time, so to speak, has interfered with the duality of the system'. In a letter (4th December 1968) Hicks thanks Kennedy for '[his] beautiful piece--'. I was so delighted by it. So elegant and so conclusive! You have tied up my loose ends, which I realise I ought to have noticed; but there is no sort of criticism which is more welcome than that. I do thank you very much.'

### **Technical Progress and Distribution**

One of the great 'constants' in economics is alleged to be the rough constancy of distributive shares between labour and capital over at least the last century despite rapid technical progress and the institutional changes that have taken place in the labour market. Hicks in The Theory of Wages (1932) expressed the view that if the income distribution has been roughly constant this is probably the result of two offsetting forces: a rise in the price of labour relative to capital combined with an elasticity of substitution less than unity offset by

labour-saving bias in technical progress (induced itself by a rise in wages). The fact that the two forces just offset each other, however, would seem to be highly fortuitous and coincidental. Moreover, it could be argued that there is no particular reason why rising wages should necessarily bias technical progress in a labour-saving direction when the objective of the entrepreneur is to minimise total costs, *unless* cost savings are easier to achieve, the higher is the ratio of one type of cost to total cost. It is this insight that lies behind Kennedy's invention of the innovation possibility frontier (IPF) [21] which provides an alternative theory of the functional distribution of income independent of the neoclassical production function.

The IPF gives the trade-off between the rate of decrease in capital and labour costs per unit of output. The frontier is non-linear because higher rates of cost savings are increasingly difficult to achieve. The entrepreneur will choose a combination of capital and labour saving technical progress to maximise unit cost reductions subject to the IPF. On a diagram, this is the point of tangency between a (linear) unit cost reduction line and the IPF. The model then gives constancy of distributive shares (and Harrod neutrality) because as the cost of one factor grows faster than another, technical change takes place to save the factor.

Such an innovative idea (inspired by an unpublished paper by Syed Ahmad which Kennedy had been sent to referee by the Economic Journal), which dispensed with the production function and with having to *assume* Harrod neutrality to make balanced growth and constant factor shares possible, captured the imagination of those in the profession working in this field, and led to a substantial secondary literature, including a major contribution by Samuelson (1965). When Kennedy was being considered for teaching posts in England in 1966, Hicks wrote to him saying that he thought 'the castle which Paul Samuelson has been building on your work would be good publicity!' A major criticism of Kennedy's theory is that the constancy of distributive shares requires constancy of the IPF, or at least some of its properties, but in reply to Samuelson, Kennedy [25] expressed the view that he

believed his theory to be a ‘slight scientific advance’ over the neoclassical theory which requires not only that certain parameters be constant but also take on a particular value. In fact, Kennedy never budged from his view that the theory of induced bias in innovation is securely founded. There is, indeed, a *prima facie* case for thinking that if labour costs are relatively large, the entrepreneur would be well advised to instruct his engineer to search for labour saving improvements! And this is a different theory from induced invention based on factor prices alone. Kennedy later extended his theory to a multi-sectoral economy with many capital goods [33], following McCain’s (1972) extension of the model to the two-sector case.

By now, Kennedy was regarded as one of the world’s acknowledged experts on the theory of technical progress, and had been asked by the Royal Economic Society to prepare a survey on technical progress for a series of Surveys in Applied Economics. Kennedy never thought of himself as an applied economist, and so he asked me to collaborate, which I did, and the Survey [34] is one of several papers we wrote together on various topics between 1971 and 1983 ([32] [34] [37] [39] [42] [43] [44] [45]).

### **Development Theory and Open Economy Macroeconomics**

Teaching at the University of the West Indies from 1961 to 1966, it was natural that Kennedy should turn his fertile mind to issues in development theory and particularly the relevance of conventional growth theory to open developing countries. His distinctive and important contribution here was to emphasise the scarcity of foreign exchange experienced by developing countries and its consequences for development thinking and strategy. Two key papers appeared in Social and Economic Studies, the house Journal of the Institute of Social and Economic Research of the University, one on ‘Keynesian Theory in an Open Economy’ [23], the other on ‘Domar-type Theory in an Open Economy’ [24]. Kennedy had no doubt that Keynesian theory properly formulated is equally applicable to developed and developing

countries, but in the first of the two papers he makes two important innovations. Recognising foreign exchange as the scarcest resource in most poor countries, he suggests as an investment criterion the concept of the ‘import efficiency of investment’ defined as ‘that rate of discount that will make the present value of the future saving in imports and/or future additions to exports equal to the import content of investment’. The concept is equivalent to Keynes’s marginal efficiency of investment, but where costs and benefits are measured in foreign exchange. The idea has never received the attention it deserves, although the Little-Mirrlees (1969) methodology for appraising the social profitability of public investment projects is analogous as saving measured in foreign exchange is used as the numeraire. Such a measure would also provide a criterion for optimal borrowing; that is, borrow up to the point where the import efficiency of investment is equal to the rate of interest on foreign borrowing.

The second important innovation was his development of what he called the input-output formulation of the foreign trade multiplier, relating imports to expenditure rather than to income through the traditional marginal propensity to import. Kennedy argued that in general it makes much more sense in an open economy to move imports to the left hand side of the national income equation, from which relating imports to expenditure becomes obvious. Recognising that all components of expenditure have an import content makes a big difference to the multiplier attached to different items of expenditure if their import coefficients differ. Kennedy and I elaborated the argument thirteen years later [42] in a more user-friendly fashion, hoping that the elementary point might get incorporated into the basic economics textbooks, but alas it has not<sup>3</sup>. As a result, students continue to be misled that the income multiplier is the same whether it is investment, government expenditure, autonomous consumption or exports that changes. In a typical developing country, however, the import

---

<sup>3</sup> An early exception was Harcourt *et al.* (1967) but not in full detail.

coefficient of investment can be two or three times higher than the import coefficient of other types of expenditure with a correspondingly lower multiplier.

In the follow-up paper, an attempt is made to synthesise Domar and Keynes-type models to explain the growth performance of developing countries. It is shown that export growth gives a country a faster rate of growth than otherwise would be the case if the capital-output ratio for exports is less than for import substitutes. If this were not the case, autarchy would be the appropriate policy to pursue! He returns to the point, however, that resource allocation should not be decided on the basis of capital-output ratios but on the calculation of the import efficiency of investment.

Ideas concerning the development process born in the West Indies came to fruition in two further papers in the Oxford Economic Papers after his return to England. In 'Restraints and the Allocation of Resources' [28] Chenery's otherwise valuable work on dual-gap analysis is criticised (e.g. Chenery and Strout, 1966) for treating saving as a resource. But saving is something negative, and Kennedy was adamant that something negative cannot be a resource! Saving (or capital) should not therefore be used as a numeraire for resource allocation because for a resource to be a numeraire it should be (i) a genuine resource, (ii) homogenous, and (iii) scarce. He reiterates the view that the only resource that satisfies these three criteria is foreign exchange. In 'Savings and the Development Process' [31] these issues are followed up by asking the question whether foreign exchange can be treated as a scarce resource in its own right regardless of whether it is undervalued or can be substituted for capital. Or, to put it another way, will the amount of investment made possible by foreign exchange be greater or less than the amount made possible by an increase in autonomous saving? Kennedy shows that it will be greater provided the labour intensity in the consumption or investment sector is greater than in the export sector, which he believed to be the case.



I absorbed the Kennedy view of foreign exchange as the scarcest resource for any country suffering balance of payments difficulties with underutilised domestic resources, and developed a model of my own of balance of payments constrained growth (Thirlwall, 1979) which on certain simplifying assumptions turned out to be the dynamic analogue of the static Harrod trade multiplier result (Harrod, 1933), as Kennedy was quick to point out to me. We then explored together the Kaldor hypothesis that through the workings of the Harrod trade multiplier a rise in import penetration will automatically cause a rise in the export ratio by depressing output, but this says nothing about the health of the balance of payments since the latter is the automatic consequence of the former. We show that matters are more complicated than they seem (see [43]), but we shared the Kaldor view that as far as the UK is concerned there has been over many years a degree of import penetration unmatched by an improvement in export performance which has constrained the growth of output.

### **Inflation Accounting and the Theory of Finance**

The behaviour of financial markets was always one of Kennedy's central interests deriving, Oppenheimer (1997) suggests, from his wartime tuition at the hands of Tommy Balogh in Balliol. Although he had been an active and successful investor for many years, he did not start writing in the area until the 1970s when he became actively involved in the debates over inflation accounting which affects, of course, the profitability of companies. Inflation in the 1970s posed two major problems for companies. Firstly, historic cost depreciation failed to ensure the maintenance of capital in real terms, and secondly a substantial part of reported profits represented stock appreciation, but such profits are illusory since companies have to replace stocks at higher prices. In January 1974 the Sandilands Committee on Inflation Accounting was set up to explore these issues and reported in September 1975. They recommended current cost accounting with depreciation based on

current cost and allowance made for stock appreciation. The Committee gave no special treatment to monetary liabilities and assets, yet inflation reduces monetary liabilities. Kennedy took the view, along with other notable commentators such as Wynne Godley and Francis Cripps in Cambridge and Martin Gibbs of Phillips and Drew, that if a company is partly financed by borrowing only a proportion of the gains from inflation should be deducted from profits, that proportion being related to assets financed from shareholders' funds. Notwithstanding this oversight, the government gave its blessing to the Sandilands Report and asked a steering group under Douglas Morpeth to work out a detailed programme for the introduction of current cost accounting. It did, but the accounting profession was unhappy with many of the recommendations, and in November 1977 a new set of guidelines were published (the so-called Hyde Guidelines) bearing all the hallmarks of a compromise. These recommended that a geared proportion of holding gains should be brought back into profit, but the proportion should only be applied to the gains represented by adjustments for depreciation and stock appreciation.

The Sandilands debate led to Kennedy writing two articles in the Journal of Business Finance and Accounting [38] [41]; a splendid review article in Economic Policy Review [40]; newspaper articles in the Times and Financial Times, and several published and unpublished letters to the press. He had a vested interest, and was indignant that the accounting procedures applied were too prudent, leading to an unnecessary reduction in the profitability of companies, thereby restraining their market capitalisation. He was also highly critical of those, such as Merrett and Sykes, who suggested that the Sandilands definition of the rate of profit is comparable to the money rate of interest. Several of his papers in this field, and on the theory of options, warrants and convertibles remain unpublished, with such titles as 'Sense and Nonsense in Merrett and Sykes'; 'Fixed Assets and the Hyde Guidelines'; 'Two Types of Gearing'; and 'A New Approach to the Fundamental Analysis of Warrants and Convertibles'.

He had prepared the synopsis for a book on Warrant Theory and Company Financing, but found it difficult to attract a publisher.

It is never easy to summarise the character and scholarly achievements of anyone in a few sentences. I have tried to identify the main areas in which Charles Kennedy made major contributions to economic science, but his *oeuvre* was much wider as the bibliography illustrates, and his impact much greater through his teaching and the time that he spent with colleagues and fellow economists discussing their work. His shyness and modesty diminished his public profile, but those who were privileged to know him will not forget the brilliance of his mind and his impish sense of fun. My own intellectual debt to him cannot be measured. Above all, he was a happy family man, and leaves a widow and four gifted children.

## REFERENCES

- Chenery, H. and Strout, A. (1966), Foreign Assistance and Economic Development, American Economic Review, September.
- Harcourt, G., Karmel, P.H. and Wallace, R.H. (1967), Economic Activity (Cambridge: Cambridge University Press).
- Harrod, R. (1933), International Economics (London: Macmillan).
- Harrod, R. (1961), The 'Neutrality' of Improvements, Economic Journal, June.
- Hicks, J. (1932), The Theory of Wages (London: Macmillan).
- Hicks, J. (1939), The Foundations of Welfare Economics, Economic Journal, December.
- Hicks, J. (1965), Capital and Growth (Oxford: Clarendon Press).
- Hicks, J. (1970), A Neo-Austrian Growth Theory, Economic Journal, June.
- Hicks, J. (1973), Capital and Time (Oxford: Clarendon Press).
- Kaldor, N. (1939), Welfare Propositions in Economics and Interpersonal Comparisons of Utility, Economic Journal, September.
- Little, I.M.D. (1950), A Critique of Welfare Economics (Oxford: Clarendon Press).
- Little, I.M.D. and Mirrlees, J. (1969), Manual of Industrial Project Analysis in Developing Countries, Vol II: Social Cost-Benefit Analysis (Paris: OECD).
- McCain, R.A. (1972), Induced Technical Progress and the Price of Capital Goods, Economic Journal, March.
- Meade, J. (1959), Review of A Critique of Welfare Economics - Second Edition, by I.M.D. Little, Economic Journal, March.
- Mishan, E. (1962), Welfare Criteria: An Exchange of Notes: A Comment, Economic Journal, March.
- Oppenheimer, P. (1997), Charles Marius Kennedy 1923-1997, The Queen's College Record, December.
- Samuelson, P. (1947), Foundations of Economic Analysis (Harvard University Press).
- Samuelson, P. (1965), A Theory of Induced Innovation along Kennedy-Weizsacker Lines, Review of Economics and Statistics, November.
- Scitovsky, T. (1941), A Note on Welfare Propositions in Economics, Review of Economic Studies, November.
- Sen, A. (1963), Distribution, Transitivity and Little's Welfare Criteria, Economic Journal, December.

- Thirlwall, A.P. (1979), The Balance of Payments Constraint as an Explanation of International Growth Rate Differences, Banca Nazionale del Lavoro Quarterly Review, March.
- Thirlwall, A.P. (1987), Nicholas Kaldor (Brighton: Harvester Wheatsheaf).

# **BIBLIOGRAPHY OF CHARLES KENNEDY**

- [1] Period Analysis and the Demand For Money (1948-49), Review of Economic Studies, Vol. XVI(1) No.39.
- [2] Devaluation and the Terms of Trade (1949-50), Review of Economic Studies, Vol. XVIII(1) No.45.
- [3] The Common Sense of Indifference Curves (1950), Oxford Economic Papers, January.
- [4] 'Monetary Policy' (1952) in G.D.N. Worswick and P.H. Ady (editors) The British Economy 1945-1950 (Oxford University Press).
- [5] Monetary Policy and the Crisis (1952), Bulletin of the Oxford University Institute of Statistics, April and May.
- [6] The Economic Welfare Function and Dr. Little's Criterion (1952-53), Review of Economic Studies, XX(2) No.52.
- [7] Concerning Utility (1954), Economica, February.
- [8] An Alternative Proof of a Theorem in Welfare Economics (1954), Oxford Economic Papers, February.
- [9] Industrial Efficiency and Growth (1955), Bulletin of the Oxford University Institute of Statistics, Vol. 17, No. 1.
- [10] The Valuation of Net Investment (1955), Oxford Economic Papers, February.
- [11] Stamp Duties as a Capital Gains Tax (1955-6), Review of Economic Studies, Vol. XXIII, No.3.
- [12] Stamp Duties as a Capital Gains Tax: A Reply (1957), Review of Economic Studies Vol. XXV, No. 1.
- [13] A Static Interpretation of Some Recent Theories of Growth and Distribution (1960), Oxford Economic Papers, June.
- [14] Inflation and the Bond Rate (1960), Oxford Economic Papers, October.
- [15] Technical Progress and Investment (1961), Economic Journal, June.
- [16] Harrod on "Neutrality" (1962), Economic Journal, March.
- [17] The Character of Improvements and of Technical Progress (1962), Economic Journal, December.
- [18] 'Monetary Policy' (1962), in G.D.N. Worswick and P.H. Ady (eds), The British Economy in the Nineteen-Fifties, (Oxford: Clarendon Press).
- [19] Welfare Criteria - A Further Note (1963), Economic Journal, June.

- [20] Two Comments [on Little's Welfare Criteria] (1963), Economic Journal, December.
- [21] Induced Bias in Innovation and the Theory of Distribution (1964), Economic Journal September.
- [22] The Case for Equities as a Part of Official External Assets (1965), Social and Economic Studies, September.
- [23] Keynesian Theory in an Open Economy (1966), Social and Economic Studies, March.
- [24] Domar-Type Theory in an Open Economy (1966), Social and Economic Studies, September.
- [25] Samuelson on Induced Innovation (1966), Review of Economics and Statistics, November.
- [26] Long Term Economic Criteria for Foreign Loans - A Note (1967), Economic Journal, September.
- [27] On the Theory of Induced Invention - A Reply (1967), Economic Journal, December.
- [28] Restraints and the Allocation of Resources (1968), Oxford Economic Papers, July.
- [29] 'Time, Interest and the Production Function' (1968), in J. Wolfe (ed), Value, Capital and Growth: Papers in Honour of Sir John Hicks (Edinburgh University Press).
- [30] The Stability of the "Morishima System" (1970), Review of Economic Studies, April.
- [31] Saving and the Development Process (1971), Oxford Economic Papers, March.
- [32] Foreign Capital, Domestic Savings and Economic Development: Three Comments and a Reply (1971), Bulletin of the Oxford University Institute of Economics & Statistics, Vol.33, No.2, (with A.P. Thirlwall).
- [33] The Stability of Multiple Exchange - A Review and A Reconsideration (1971), Surrey Papers in Economics, October.
- [34] Surveys in Applied Economics: Technical Progress (1972), Economic Journal, March (with A.P. Thirlwall).
- [35] A Generalisation of the Theory of Induced Bias in Technical Progress (1973), Economic Journal, March.
- [36] The Death-Rate of 'Tractors' and the Rate of Depreciation (1973), Oxford Economic Papers, March.
- [37] Technological Change and the Distribution of Income: A Belated Comment (1973), International Economic Review, October (with A.P. Thirlwall).
- [38] Inflation Accounting, Profits, Profitability and Share Valuation (1976), Journal of Business Finance & Accounting, Spring.

- [39] Extended Hicks Neutral Technical Change - A Comment (1977), Economic Journal December (with A.P. Thirlwall).
- [40] Inflation Accounting: Retrospect and Prospect (1978), Economic Policy Review, March.
- [41] Fixed Assets and the Hyde Gearing Adjustment (1978), Journal of Business Finance & Accounting, Vol. 5, No. 4.
- [42] The Input-Output Formulation of the Foreign Trade Multiplier (1979), Australian Economic Papers, June (with A.P. Thirlwall).
- [43] Import Penetration, Export Performance and Harrod's Trade Multiplier (1979), Oxford Economic Papers, July (with A.P. Thirlwall).
- [44] 'The Foreign Trade Multiplier Revisited' (1980) in D. Currie and W. Peters (eds), Studies in Contemporary Economic Analysis, Vol. 2 (Croom Helm) (with A.P. Thirlwall).
- [45] Import and Export Ratios and the Dynamic Harrod Trade Multiplier: A Reply to McGregor and Swales (1983), Oxford Economic Papers, March (with A.P. Thirlwall).
- [46] Biased and Unbiased Technological Change (1987) in J. Eatwell, M. Milgate and P. Newman (eds), The New Palgrave Dictionary of Economics Vol.1 (London: Macmillan).