Introduction

Philip Arestis and John McCombie

Where does one begin to review Tony Thirlwall’s substantial contribution to economics? We considered starting chronologically with his early pioneering work in regional economics and labour economics. There he examined, inter alia, regional differences in unemployment and how disequilibrium in the labour market affects inflation. However, Tony has been so productive that short of an intellectual biography, it is difficult to do justice to him. Consequently, we are not going to attempt a comprehensive review, but rather let the contributions to this Festschrift bear eloquent testimony to his influence on the profession. Nevertheless, we felt it appropriate to write a few words by way of introduction to the volume, albeit it as a brief Cook’s tour of Tony’s contributions. It also follows that we have been necessarily somewhat eclectic. Fortunately, there are now two volumes of Tony’s collected essays that provide a useful and convenient reference to his work, although, having been published in Thirlwall 1995 and 1997, it is clearly time for a third volume! Even a casual perusal of these volumes will quickly establish the wide variety and scope of his output.

Tony Thirlwall is best described as a Keynesian applied economist, a category he would probably not object to. Indeed, he considers the term ‘unreconstructed Keynesian’ which he has used to describe himself, not to be a pejorative title, but more an accolade! He is an applied economist, but not because he eschews theory; far from it. As we document below, he has made major contributions to economic theory. He is applied because he believes that to be of any importance: theory must be related to, in that hackneyed but nevertheless relevant phrase, the ‘real world’. He has no time for esoteric theory, no matter how elegant. As Tony says, ‘In my own research in, and writing in later years, I have always tried to treat economics as a moral science – as a branch of ethics – in the Keynesian (Cambridge) tradition, choosing policy issues of public concern and using economic theory primarily as an aid to policy analysis’ (Thirlwall, 1995, p. ix).

He has a consistent view of how the macro economy works, which takes its inspiration from Keynes and comes from a carefully reading of the General Theory – how many economists today can say that? As Tony puts it, ‘If Milton Friedman and his disciples had ever properly understood the General Theory,
how could they claim that “money doesn’t matter in Keynes”? If Robert Lucas and his followers knew their Keynes, how could they possibly maintain that Keynes’s macroeconomic model cannot explain stagflation?’ (1995, p. x).

One of the pleasures of reading any of Tony’s papers is that he writes clearly as well as persuasively. This is true of both his technical and his more general papers. As far as the latter is concerned it is difficult to do better than to mention his 1981 paper *Keynesian Employment Theory is not Defunct* together with his 1993 paper, *The Renaissance of Keynesian Economics*. The first, as its title suggests, is a clear statement of the insights Keynes still has for the functioning of the economy, while the latter article shows how subsequent economic events have amply justified Tony’s earlier arguments. Both these papers should be compulsory reading for first year economics students, if only to show them that there is more to macroeconomics than may be gleaned from the standard textbooks such as Mankiw (2002).

It was not only through his writings that Tony kept the Keynesian, or rather Keynes’s, message alive during the years of the onslaught from monetarism and new classical economics. He organised eleven Keynes seminars at the University of Kent between 1972 and 1993 that touched on a wide variety of Keynesian topics. The seminars were packed out, and a wider audience was reached through the publication of the various papers. In the 1970s, the notable contemporaries of Keynes (Roy Harrod, Richard Khan, Joan Robinson, and Nicholas Kaldor) were present at one time or another at the seminars. This was perhaps the only time many of the younger generation of Keynesian economists had a chance to meet these giants of the profession and to see them in action.

Apart from his work on short-run macroeconomics (multiplier analysis, unemployment, inflation etc.) much of Tony’s research is focussed on the twin themes of growth and development and the open economy. One can see in some of his work the influence of the late Professor Lord Kaldor, and much of Tony’s work is in what may be best described as the Kaldorian tradition (see, for example, Kaldor, 1995). Tony is Kaldor’s literary executive and wrote a definitive biography of him, which not only clearly explains Kaldor’s economic Weltanschauung, but is a good read into the bargain (Thirlwall, 1987). With Fernando Targetti, Tony also compiled a collection of Kaldor’s most influential papers published in 1989 as the *Essential Kaldor* and they also edited (together with C. Filippini) Kaldor’s Mattioli lectures.

Kaldor (and, before him, Gunnar Myrdal) had long argued that it was not possible to explain why some countries are rich and others poor without understanding that growth occurred by a process of cumulative causation. Feedback effects mean that there are powerful forces that perpetuate the fast growth rate of the successful countries and cause slow growing countries to be caught in a vicious circle of low productivity and low output growth. The early Solow growth model, with its emphasis on convergence and its artificial (and not very
illuminating) dichotomy of growth into that caused by the growth of factor inputs and that resulting from technical change, was not seen as a productive approach. There is no point in distinguishing between shifts of the production function and movements along the production function and as the two movements are inextricably related. (If the overwhelming economic forces are for convergence, how does one explain the fact that two centuries ago the ratio in per capita income between the richest and the poorest areas were about 1:3 and now they are 1:70?)

At the heart of Kaldor’s explanation, long before the development of endogenous growth theory, was that much of technical progress was induced by the growth of output. This was formulated in his famous technical progress function, of which the Verdoorn law can best be regarded as an empirical counterpart. The Verdoorn law is the statistical relationship found between productivity and output growth. A statistically significant (Verdoorn) regression coefficient is interpreted as evidence of increasing returns to scale (of both the dynamic and static variety) and induced technical change. Tony found much to commend in Kaldor’s emphasis on the importance of beginning with empirical relationships and ‘Kaldor’s three growth laws’, of which the Verdoorn law is one. He organised a symposium whose proceedings were published in the 1983 edition of *Journal of Post Keynesian Economics* and did much to stimulate interest in these ideas. Nearly all of Kaldor’s later key writings were of a verbal nature, and were publications of addresses or lectures he had given (see, for example, his 1979 ‘Case for Regional Policies’ or his 1982 ‘Irrelevance of Equilibrium Economics’). It was Tony who, along with a then PhD student of his, Robert Dixon, formalised in 1975 Kaldor’s growth analysis in what has become the canonical cumulative causation model. Others have later extended the model by, *inter alia*, including the supply side, but even after 30 years the original article remains essential reading for any student of the growth process. He also formalised Kaldor’s two-sector model, neatly capturing the essence of Kaldor’s insights on the importance of the growth of sectoral demand in the economic growth process, and also clarifying the argument (Thirlwall, 1986).

Tony has long been interested in the open economy, and indeed he wrote a major textbook on the subject that went to four editions, the last co-authored with Heather Gibson in 1993. His interests in growth and the open economy came together in his famous balance-of-payments constrained growth model and what came to be known as ‘Thirlwall’s law’. Mohammed Hussain’s contribution to this volume tells how Tony first introduced the law to his postgraduate students at the time when he was still drafting the paper. It is now far too late to call it ‘Thirlwall’s rule’, as Mohammed suggests was Tony’s modest preference. But it is doubtful if Tony had any idea of just what impact the model, published in 1979 in the *Banca Nazionale del Lavaro Quarterly Review*, would have on the profession. There has been a proliferation of papers since 1979,
testing the law and elaborating its theoretical basis (see the collection of papers in McCombie and Thirlwall, 2004). It is fair to say that it now stands as the major alternative explanation to the neoclassical model of why growth rates differ.

The simplest version of the law states that the rate of growth of output consistent with the balance of payments being in equilibrium is given by

\[ y_B = \frac{x}{\pi} = \frac{\varepsilon z}{\pi} \]

where \( x \) is the growth of exports, \( \pi \) is the income elasticity of demand for imports, \( \varepsilon \) is the income elasticity of demand of world demand for exports and \( z \) is the growth of world income. The explanation of this law is relatively straightforward. If changes in relative prices have little effect on the growth of exports and imports, and the evidence suggests that this is the case, then any growth of income faster than \( y_B \) will have to be financed from abroad by a growing inflow of capital. The overseas debt-to-income ratio will grow, but this will be unsustainable in the long run. The only way to prevent this occurring is to reduce the growth of imports, and the only effective means to accomplish this is to reduce the rate of growth of output. If, as a result, this is below the growth of productive potential, then the growth rate is ‘balance-of-payments constrained’. The result is a lower rate of capital accumulation and induced technical change than would otherwise be the case, with increasing overt and/or disguised unemployment. In an important paper, Tony, with Miguel León-Ledesma, (2002) has shown that the natural rate of growth is indeed endogenous and not immutable.

Differences in growth rates, in this schema, are predominantly caused by international differences in the values of \( \varepsilon \) and \( \pi \), which reflect all aspects of non-price competitiveness – factors which change relatively slowly over time. Of course, the model and the argument can be qualified in a number of ways, and future lines of research that suggest themselves, for example, elaborating and analysing the determinants of non-price competitiveness; what affects it and how it changes over time. But the essential insight of the simple model still remains and it is remarkable how well the model stands up to statistical testing (McCombie and Thirlwall, 2004). The model amply fulfils one of Tony’s requirements that a good model ‘explains a lot from a little’. Its policy implications are far reaching. A major problem for a developing country is to acquire sufficient foreign exchange earnings to pay for especially the capital goods required for development etc. and at the same avoid the balance-of-payments constraint. But if a large number of countries target the same export sector or product, the world income elasticity of demand of an individual country’s exports in that sector may be low, even though world demand for the product overall is growing rapidly.

In 2000, Tony gave a series of lectures at the National University of Mexico on the nature of economic growth. In the resulting short book, *The Nature of Economic Growth*, he clearly and in a successfully non-technical way lays out
his views of, in the words of the subtitle, *An Alternative Framework for Understanding the Performance of Nations*. This is, again, another publication that should be on every undergraduate’s reading list.

The title of this Festschrift, *Growth and Development*, was chosen with care as the other great interest of Tony is in the whole field of economic development. His monumental book, *Growth and Development, with Special Reference to Developing Countries* has established itself as the leading textbook in the area and is now in its eighth edition, the first being published in 1972. It bears witness to Tony’s encyclopaedic knowledge of development issues. (As Roger Vickerman documents in the next article, Tony has built up a large and successful MPhil in Development Economics at the University of Kent with many of his students going on to important posts in development agencies etc.) Much of his research, such as the balance-of-payments constrained growth, has immediate implications for development as Mohammed Hussain shows in Chapter 1. Tony has also been adviser to many developing countries, with strong links to the African Development Bank. He has, at times, been controversial, daring to criticise IMF policies and to raise the heretical view that possibly, just possibly, unilateral free trade and unfettered capital liberalisation, as well as exchange rate unification in all circumstances, may not be in the best interests of a developing country.

Tony’s desire to further understanding of the growth process shows no signs of abating. He has recently examined the role of trade liberalisation on economic growth (Thirlwall and Santos-Paulino, 2004) and will no doubt produce many more important insights in the years to come. We noted at the beginning of this Introduction that we would prefer to let the papers contributed to this volume bear witness to his significant contribution to the economics; so let us turn to these.

Mohammed Nureldin Hussain was a pupil, collaborator, and friend of Tony’s and it is with sadness that we record his untimely death after he had submitted his chapter, *The Implications of Thirlwall’s Law for Africa’s Development Challenges*, for this Festschrift. Mohammed Hussain provides a fascinating pen-portrait of Tony, as well as an intriguing insight into the development of Thirlwall’s law, prior to the publication of the famous *Banca Nazionale del Lavoro Review* article in 1979. He shows the relevance of the law and its extensions to the contemporary debate on Africa’s development issues. Thirlwall’s law proves to be highly relevant for the setting of African development priorities related to: (i) poverty reduction; (ii) growth and debt sustainability; (iii) globalisation and the income dimension of global competition; and (iv) the development effectiveness of foreign aid in relation to the issue of transformation. Hussain also demonstrates that Thirlwall’s Law has a multitude of analytical capabilities and he concludes with some policy implications related to a long-term strategy of socio-economic development in Africa.
Mark Setterfield in *Thirlwall’s Law and Palley’s Pitfalls: A Reconsideration* answers a challenge to the balance-of-payments equilibrium growth model posed by Palley (2002). Palley considers that in Thirlwall’s schema, with the growth of demand being determined by the growth of exports via Thirlwall’s Law, and the growth of the supply of output being determined by the growth of productivity and the growth of the labour force (through the Verdoorn law), the model is over-determined. This is true if the growth of supply forthcoming is interpreted as the growth of productive potential or the natural rate of growth, as Palley maintains. One solution Palley proposes is to have the income elasticity of imports determined by the supply conditions. Thus, if the balance-of-payments growth rate is slower than the growth of potential supply, for some reason the income elasticity of demand for imports falls, bringing the two growth rates into equality. In this scenario, there cannot be, by definition, any balance-of-payments constraint. Mark Setterfield, however, proposes a more plausible scenario. With a lower growth rate and a depressed labour market, the size of the Verdoorn coefficient falls. As the Verdoorn coefficient captures both increasing returns to scale and induced technical change, this causes the growth of productivity to fall. Thus, while the labour force may be fully employed, the growth of productivity (and hence real wages) is below the level that would occur if export growth were faster. This is very much in accord with Tony Thirlwall’s contention that the natural rate of growth is endogenous.

Geoffrey Harcourt, on the other hand, concentrates on a somewhat narrower aspect of Thirlwall’s work in his chapter *On Specifying the Demand for Imports in Macroeconomic Models*. Although specifying imports as a function of gross expenditure (i.e., expenditure including that on imports) rather than national income had been briefly mentioned in the past, it was Tony Thirlwall with Charles Kennedy who first fully articulated the case for using expenditure. Geoff Harcourt, however, suggests that the conventional use of income, rather than expenditure might have been right all along, but for the wrong reason and thus presents a challenge for Tony Thirlwall (‘I shall be the first to cheer if Tony shows that I am now wrong’).

Paul Davidson in *Post Keynesian Analysis and the Open Economies of the Twenty-first Century* shows that while the General Theory was essentially about a closed economy, it nevertheless contains important insights for the global economy, a view with which Tony certainly agrees. Paul Davidson cites chapter and verse, arguing persuasively that many of the policies advocated in the General Theory are equally relevant to today’s more open economies. When there are unemployed or underemployed resources, an increase in exports by one country will merely lead to a fall in demand and employment in the importing economy. This can only be avoided by a co-ordinated expansion of demand as flexible exchange rates are inadequate to ensure full employment in all countries. He shows that Thirlwall’s law, which reflects the dynamic Harrod foreign trade
multiplier, is a simple yet powerful explanation for the understanding of growth rate differences in both advanced and less developed countries. ‘Consequently’, Paul Davidson concludes, ‘Thirlwall’s law demonstrates that international financial payment imbalances can have severe real consequences, i.e. money is never neutral in an open economy’.

The next three chapters move away from the open-economy model and consider growth in a closed economy framework. The relationship between short-run cycles and long-run growth is a central theme in Thirlwall’s contributions to growth economics, who has shown that the natural rate of growth is endogenous. In the next chapter entitled *Cycles, Aggregate Demand and Growth*, Miguel León-Ledesma discusses the possible relations between cycles, aggregate demand shocks, and growth. He further proposes a simple time-series method for analysing this statistical relation that endogenizes the impact of cycles on the definition of trend output. He then applies this method to analyse the cases of the US, Germany and the UK and finds that cycles do seem to have a strong impact on trend output, but this impact is different for the three economies in question.

Mark Roberts revisits a debate concerning the compatibility of Kaldor’s writings on the cumulative causation nature of economic growth and his well-known critique of equilibrium economics. Mark Setterfield (1997) has pointed out that the formalisation of the cumulative causation model along the lines of Dixon and Thirlwall is not truly path-dependent. This is because the solution of the model depends only upon the exogenous parameters. Setterfield constructed an extended model to overcome this shortcoming, although, as he later admits, this was not entirely successful. While it has been argued by some that it is not possible to formally (mathematically) model Kaldor’s vision of the growth process, Mark Roberts disputes this. He builds on Setterfield’s approach to construct a model that is, as Roberts puts it, ‘consistent with the spirit of Kaldor’s historical growth process’. This involves the adoption of an ‘open systems-ceteris paribus’ approach to modelling.

The chapter by Philip Arestis and Malcolm Sawyer, *Endogenous Growth Theory: A Partial Critique* begins by pointing to the many contributions of Tony Thirlwall. His writings on growth theory with his emphasis on the role of demand, balance-of-payments constraints, endogeneity of the natural rate and the role of sectoral analysis have made major contributions to understanding the growth process and also provide a continuing (sometimes implicit, sometimes explicit) critique of endogenous growth theory. It is, thus, very fitting that Philip Arestis and Malcolm Sawyer indulge in a critique of endogenous growth theory. The critique is partial in the sense of not being comprehensive which is precluded by space considerations. (But no doubt Tony Thirlwall himself would be partial to it!) They review briefly the endogenous growth theory, and concentrate on the returns to scale assumption and its implications. This is followed
by a discussion on the approach to investment and productivity growth in endogenous growth theory. A brief review of the relevant empirical evidence is offered before they conclude that the critique they offer sits very comfortably with Tony Thirlwall’s numerous contributions on this matter.

John McCombie in The Nature of Economic Growth and the Neoclassical Approach: More Questions than Answers? also critically reviews the neoclassical approach to economic growth. For reasons of space, this chapter is eclectic and deliberately does not concern itself with the Keynesian or Kaldorian approach. He considers the role of capital accumulation and technical progress in the Harrod–Domar model and the Solow model and concludes, like Richard Nelson and others, that these approaches do not tell us much that we did not already know. The new growth theory is shown to incorporate certain theory-dependent assumptions that are simply there to give the model a steady-state solution. Finally, McCombie draws upon work he has done with his colleague, Jesus Felipe, that questions the whole notion of the aggregate production function (a concept which is the sine qua non of neoclassical macroeconomics) and whether it can be tested. He shows that, in this light, the Mankiw–Romer–Weil (1992) growth model has little or no explanatory value.

John Cornwall is more concerned with important issues of the short run, rather than economic growth per se. His chapter, On the Core of Macroeconomics, can be regarded as falling into two parts. The first part provides a critique of mainstream macroeconomics theory. It argues that the New Keynesian Macroeconomics suffers from serious errors of commission and omission, ultimately traceable to its failure to shed the neoclassical roots of both its short-run and long-run analysis. These errors lead to serious inconsistencies in its theoretical structure and its inability to explain the broad historical tendencies of macroeconomic development. In the second part of the chapter, Cornwall develops a macroeconomic theory based on macroeconomic principles associated with Keynes’ General Theory, an approach with which Tony Thirlwall has a great deal of sympathy. The result is an extended Keynesian core theory capable of describing in greater detail the short-run and long-run macroeconomic processes at work in advanced capitalist economies, and of providing an account of the historical development of modern economies.

One of the major macroeconomic concerns in Europe at the moment is the functioning (or lack of functioning) of the Stability and Growth Pact. While sanctions were brought to bear on a small country, Portugal, that breached the Pact regulations, once this was perpetrated by two of the major players, France and Germany, the Stability and Growth Pact was suspended. Roberto Tamborini and Fernando Targetti outline the problems inherent in the Pact and concede that ‘it was obtained with significant damage to the already fragile structure of the Community institutions’. The solution, they contend, is not to be found in further tinkering with the Pact. What is required is a more radical approach: the
creation of a European Confederation Treasury, which would have the substantial fiscal responsibilities that many fully integrated federal systems have. They admit that this is not politically feasible, at least at the present. Consequently, they outline a ‘second best’ solution of reforming the budgetary rules and setting up a Budgetary Authority without changing the ‘distribution of powers’.

Keynesian economists have long sought to promote a framework for economic decision-making that allows for the clash of ideas to have some impact on outcomes. They have not seen democratic accountability and discretion as a problem to be overcome through various devices such as independent central banks, budgetary rules and so on, but rather as part of the answer to good economic policy-making. In their chapter Heather Gibson and Euclid Tsakalotos argue that this approach is absent from the institutional framework and the policies of the EU, which are far from neutral with respect to the choices member states make between the two poles of a liberal capitalist economy and a more institutional economy. The pressure is to keep as close as possible to the liberal pole. They support this argument by examining both the macroeconomic framework and the financial framework and discuss the implications for the new EU member states.

The remaining chapters reflect Tony Thirlwall’s long abiding interest in development issues and problems. In *Competition and Competition Policy in Emerging Markets: International Development Decisions*, Ajit Singh examines the role of competition policy in emerging markets from a developmental and international perspective. It comes to a number of important conclusions. Contrary to conventional wisdom, evidence suggests that the intensity of competition in leading emerging markets is certainly no less than that observed in advanced countries. He shows that analysis and evidence indicates that maximum competition is not necessarily optimal in terms of dynamic efficiency. There is little evidence to indicate that the current international merger wave will enhance global economic efficiency. An implication is that developing countries need a competition policy today, because of (i) privatisation and de-regulation, and (ii) the huge international merger movement. However, the current competition policies in the US and the European Union are unsuitable for developing countries. Countries at different levels of development and governance capacities require different types of competition policies. The chapter concludes with a proposal for a development-oriented international competition authority to control anti-competitive conduct and growth by mergers of large multi-nationals.

Next, Valpy FitzGerald takes up Thirlwall’s two models of saving behaviour in developing countries in *Models of Saving, Income and the Macroeconomics of Developing Countries in the Post-Keynesian Tradition*, and expresses them formally in terms of the modern inter-temporal and open-economy frameworks. Reinterpreting Thirlwall’s Keynesian view on the relationship between per
capita income and the aggregate savings rate as a wealth effect in the inter-
temporal framework justifies his qualitative insights into financial liberalisation. 
Placing Thirlwall’s Kaldorian model of the link between wages, inflation and 
saving within the modern open-economy framework clarifies the role of the 
exchange rate. Finally the chapter extends these ideas by including an autono-
mous investment function to reveal the medium term effects of the real exchange 
rate on real wages and thus investment and employment in a post-Keynesian 
approach to the adjustment process.

John Toye, as the title of his chapter The Influence of Keynes on Development 
Economics suggests, returns to John Maynard Keynes, who exercised consider-
able influence on the formative years of development economics through his 
disciples. Key issues were the relevance of disguised unemployment to develop-
ing countries and the supply side policies that would have to complement 
Keynesian demand management. Although Michael Kalecki made a greater 
contribution to structuralist economics, Keynesian accounting formats still 
dominate macroeconomic development models. The legend of Keynes – his 
policy advocacy and intellectual innovation – also inspired emulation by a 
younger generation of development economists, both in ‘revolutionising’ eco-
nomic theory and in promoting the Keynesian version of the international 
economic architecture. Ironically, Toye suggests, his writings on Soviet develop-
ment were neglected, and Keynes’s modern critics unknowingly used his own 
arguments to try to discredit his influence.

We are extremely grateful to Edward Elgar for his encouragement to put to-
gether this volume in honour of A.P. Thirlwall, and to his efficient staff for 
making this project possible. We are of course equally grateful to the authors 
for their contributions to this volume. The University of Kent Economics De-
partment very generously hosted a conference to celebrate A.P. Thirlwall’s 
numerous contributions not merely to this department but also to the discipline 
of economics. We thank them all for their input to this book and relevant 
celebrations.

NOTES

1. The others showed the importance of the manufacturing sector as the engine of growth and the 
importance of the intersectoral transfer of labour in explaining productivity growth 
disparities.

2. This misunderstands the nature of a binding constraint. The balance-of-payments constrained 
equilibrium growth rate, as it is by definition a constraint on economic growth, is below the 
growth of productive potential (the natural rate of growth). The latter is the maximum growth 
of output that could be achieved, given supply side factors, with the necessary accompanying 
growth of exports. In other words, it is the maximum possible growth of output that would occur 
if there has not been any demand constraints in the past. See Thirlwall (2001). The result is that 
the balance-of-payments constrained equilibrium growth rate leads to increasing unemployment.
and/or disguised unemployment (especially in the service and public sector), increased emigration and/or reduced immigration and a slower rate of capital accumulation. There will also be a fall in the rate of growth of productivity through increasing x-inefficiency, as labour markets are not tight, and also through the Verdoorn effect. As Mark Setterfield points out, the size of the Verdoorn coefficient itself may fall.

However, the growth of productive potential is a somewhat ambiguous concept. The rate of growth at which the supply constraint becomes binding will depend upon the past performance of the economy. In other words, there is path-dependent process in operation. (See the chapter by Mark Roberts in this volume.) Nevertheless, it is unlikely that the growth of productive potential will necessarily converge to the balance-of-payments equilibrium rate, in the sense that if a sustained increase in exports occurs, this will eventually lead to an increase in the long-run growth of output. All this is either implicit, or explicit, in the literature on the balance-of-payments constrained growth model (see, for example, Thirlwall, 1979, 2001, and McCombie and Thirlwall, 2004). The irony is that one of the putative solutions that Palley himself proposes to overcome what he sees as an ‘inconsistency’ in the model is along the lines mentioned above. Mark Setterfield gives an insightful discussion of these issues.

REFERENCES