



Goodwin's structural economic dynamics: Modelling Schumpeterian and Keynesian insights

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Available online 6 October 2006

Abstract

In this paper we pursue the work started jointly with R. Goodwin in the 1990s. Goodwin's later work went very much in the direction of modelling Schumpeter's insights into structural and technological transformations in the context of disaggregated models while allowing for non-full employment outcomes and macroeconomic cyclical patterns to develop alongside these transformations. In a series of papers we have followed up this work for closed and open economies, drawing out in particular the implications of structural transformations for macro-distributional dynamics and effective demand problems. This has been analysed for advanced and catching-up economies and their interdependencies on the global stage. We shall review our modelling efforts in this respect and trace these back to Goodwin's life-long preoccupation with synthesising disaggregated (linear) modelling with macro-dynamic analysis.

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JEL classification: C61; F02; F43; F47; O11; O41

Keywords: Richard Goodwin; Structural economic dynamics; Modelling global economic integration

1. Introduction

In this paper we pursue the work started jointly with Richard M. Goodwin in the 1990s. Goodwin's later work went very much in the direction of modelling Schumpeter's insights into structural and technological transformations in the context of disaggregated models while allowing for non-full employment outcomes and macroeconomic cyclical patterns to develop alongside these transformations. In a series of papers we have followed up this work for closed and open economies, drawing out in particular the implications of structural transformations for macro-distributional dynamics and effective demand problems. This has been analysed for advanced and

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catching-up economies and their interdependencies on the global stage. We shall trace these modelling efforts back to Goodwin's life-long preoccupation with synthesising disaggregated (linear) modelling with macro-dynamic analysis. Goodwin's economic research pursued consistently a number of tracks: on one side, was his preoccupation with economic cycles and it is here that we find his best known and possibly most durable contributions (see Goodwin, 1982). The other side was his life-long concern with economic structures and how these evolve through time; see his collection of papers Goodwin (1983a), and his advanced economic theory lectures at Cambridge in Goodwin (1970).

Apart from this thematic compartmentalisation of his contributions one should also consider the force field of influences spanned by famous economists on the type of economic questions he posed throughout his life. The collection of economists who had a significant effect on his work is formidable: Joseph Schumpeter, John Maynard Keynes, Roy Harrod, Nicholas Kaldor, Wassily Leontief, John R. Hicks, Richard Stone, Piero Sraffa. Apart from this there were a number of non-economists who were deeply influential, particularly the mathematician John von Neumann, the physicist Le Corbeiller and later Hermann Haken and Otto Rössler. We got to know Richard M. Goodwin only in the 1980s and 1990s when he was still very prolific (having taken up a new professorship in Siena after retiring from his post in Cambridge). At that stage he was very actively involved in the booming area of introducing the intricacies of non-linear dynamics into economic models, an area in which he had already been a pioneer in the 1950s and where he attracted a large group of young economists who were interacting with him on these issues and who carried this research line forward (to name a few: Alfredo Medio, Kumaraswamy Vellupillai, Juergen Glombowski, Hans-Werner Lorenz, Peter Flaschel, Willi Semmler, Jerry Silverberg, Meghnad Desai, etc.) Some of Goodwin's later writings in this area are collected in Goodwin (1989, 1990). On the other hand, he was also occupied with work on a synthetic major treatise which could bring together what he considered essential to understand the 'Dynamics of a Capitalist Economy' (see his major work with Lionello Punzo in Goodwin and Punzo, 1987) and which integrated what he considered substantial ingredients from Keynes and Schumpeter in a comprehensive effort of 'structural economic modelling'.

2. Goodwin's later structural economic dynamics

Let us dwell a bit on Goodwin's ambition in this area which he most likely carried with him all his life but which crystallised most clearly in the last two decades of his life when he made the effort to bring all the strings together:

Goodwin's views of capitalist dynamics was essentially Marxian, Keynesian and Schumpeterian (he coined it the 'M–K–S system'). He emphasised the importance of the introduction of new technologies as a very important feature driving structural change and economic growth. As with Schumpeter, he thought that macro-distributional dynamics (between labour and capital income) is driven by the impact of the introduction of new techniques of production which Goodwin, however, combines with the Marxian insights of changing power relations on the labour market due to changing employment/unemployment levels which accompany these adjustment processes and which react back on the dynamics of wages, profits and investment. What is also explicitly modelled in Goodwin's writings is the importance of differentiated rents which emerge due to the uneven technological and price–cost dynamics in different sectors of the economy.¹ He deviated

¹ Here Goodwin's interest in multi-sectoral modelling leads to a different use of Marshall's or Schumpeter's emphasis on 'surplus profits' (in Marshall 'quasi-rents', in Schumpeter simply 'profits') which in these authors describe the relative

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