



Gennaro Zezza<sup>1,2</sup> and Alan Shipman<sup>3</sup>
<sup>1</sup>University of Cassino and Southern Lazio,
Cassino, UK
<sup>2</sup>Levy Economics Institute of Bard College,

<sup>2</sup>Levy Economics Institute of Bard College, Annandale on Hudson, New York, USA <sup>3</sup>Open University, London, UK

#### Abstract

The chapter provides a brief biography of Wynne Godley (1926–2010), a British economist who informed the discussion of economic policy in the United Kingdom and later the United States. Godley was the main contributor to the development of the stock-flow-consistent approach to macroeconomics, setting out models based on rigorous accounting which allowed him to anticipate (ahead of more orthodox forecasters) adverse developments in the UK economy in the 1970s and 1980s, as well as the global recessions of 2001 and 2007–2009.

### JEL Classification

B31 · B50 · E12

### Wynne Godley 1926-2010

The Hon. Wynne Alexander Hugh Godley was born in London in 1926, the grandson of John Arthur Godley (who had served as Permanent Under-Secretary of State for India) and son of Hugh John Godley, a prominent but erratic lawyer (Cripps and Lavoie 2017; Shipman 2019). He studied Philosophy, Politics and Economics at Oxford, but started his career as an orchestral musician, after training at the Paris Conservatoire for 3 years. A lifelong interest in visual arts developed through his marriage to Kathleen (Kitty) Garman, ex-wife of Lucian Freud and daughter of the sculptor Jacob Epstein, whose cast of Godley's head became that of St Michael conquering the Devil on the wall of the rebuilt Coventry Cathedral.

Godley abandoned a promising career as a professional oboist due to stage fright and, after a brief period in industry, was employed in the UK Treasury in a period (from 1956) when the systematic collection of macroeconomic data had just begun. His capacity for short-term forecasting was quickly recognised by senior Treasury advisers, notably Nicholas Kaldor (economic adviser with a special focus on tax from 1964) and Sir Claus Moser (director of the Central Statistical Office from 1967). He became expert at assembling data jealously guarded by the departments that collected it, and, in a world of slow and expensive computing, at using the leading indicators to derive sensible GDP, inflation and tradebalance projections in time for annual budget preparation.

Painfully aware of how little the Treasury knew of the precise relationships among key economic aggregates, Godley used a 1963–1964

secondment to the National Institute of Economic and Social Research (NIESR) to review existing methods of calculating and forecasting GDP and simulating effects of policy changes. conducted several sector studies of price-setting to develop the mark-up pricing ideas first acquired from his Oxford economics tutor Philip Andrews, especially testing the hypothesis that firms markup prices over cyclically corrected 'normal' cost. The discovery that industrial prices adjust more slowly than current costs, causing output and productivity to fluctuate with aggregate demand, was refined in later studies with Ken Coutts, Robert Neild and William Nordhaus (Neild 1963; Godley and Nordhaus 1972; Coutts et al. 1978), yielding strong implications for the impact of different taxes and the effectiveness of fiscal policy for stabilising output.

Returning to a Treasury at which Neild had joined Kaldor as an economic adviser after the Labour Party's 1964 election win, Godley rose to be a deputy director, still supervising forecasts but focusing on major policy interventions. His most sensitive task was to calculate the size of pound sterling devaluation (and accompanying fiscal restriction) needed in 1967, when Labour belatedly decided this was essential for restoring external balance without sacrificing full employment. He also worked on the detail of a number of Kaldor's innovative tax schemes, notably the Selective Employment Tax (SET) designed to boost investment in manufacturing industries and regions. The improved economic climate following devaluation gave time to deploy the Treasury's improving statistical resources on empirical tests of theories previously derived from 'stylised facts'. These included an investigation of Verdoorn's Law (the link between labour productivity and manufacturing output growth which had motivated the SET), and an exercise in 'growth accounting' which defended the effectiveness of Treasury fiscal management against Robin Matthews' (1968) calculation that private investment drove post-war recovery.

Recruited as director of the Cambridge University Department of Applied Economics (DAE) from 1970 by Kaldor, Godley was coldly received by the neighbouring Faculty of Economics, and

continued to work on short-term economic policy challenges. He assembled and secured funding for the Cambridge Economic Policy Group (CEPG), a team of macro and labour-market researchers whose quarterly Policy Review gave short-term forecasts and simulations of alternative policy impacts. Francis Cripps, who had worked with Kaldor in the Treasury and resigned his tenured Faculty post to join the CEPG, led the programming of the computer model and the academic presentation of its distinct methodology (Cripps and Godley 1976).

Despite maintaining close connections with it, Godley clashed with the Treasury on a number of issues, beginning with the Conservative government's fiscal stimulus of 1973–1974, which he correctly predicted would end with higher inflation and renewed current-account deterioration. He led a revolt against the system of real-terms public expenditure projection, introduced in the late 1960s to strengthen the Treasury's control over multi-year spending programmes, which actually weakened it during the high early-1970s inflation (despite attempts at more accurate cost deflation) and pushed the next Labour government towards imposing cash limits. Treasury trust was further weakened by a very public battle between Godley's group and 'Cambridge Keynesian' colleagues (led by Richard Kahn and Michael Posner), fought out on the pages of The Times newspaper where the CEPG had a regular commentary slot. The dispute arose from Godley's re-interpretation of the basic macro-accounting identity, later defined as the 'fundamental identity':

$$(G - T) + (I - S) = (M - X)$$

in which the current account deficit (roughly iMports minus eXports) is the ex-post sum of the public sector deficit (Government spending minus Tax revenue) and the private sector deficit (Investment minus Saving). His empirical work with Cripps suggested that in the UK private saving (S) had consistently moved along with private investment (I) throughout the 1960s (and

for a longer period after abstracting from the temporary displacement of S above I when post-war pensions schemes were launched). The long-term stable relation between S and I supported the view that the private sector's net acquisition of financial assets (NAFA) should be stable, with households and firms targeting a steady ratio of financial assets to income in real terms.

If NAFA is stable, any fiscal deficit (G > T)would be matched by a current-account deficit (M > X). This contradicted the preferred Cambridge view that the private sector tended to oversave, leading to times when a fiscal deficit was necessary to preserve full employment and compatible with external balance. In the event, the Labour Government managed to run a higher deficit in 1974-1975 without dire inflationary or balance-of-payments consequences, vindicating those who argued that high inflation would drive up private-sector saving. This distancing from the Chancellor, Denis Healey, left Godley's group powerless to stop Labour denouncing 'Keynesian' fiscal expansion in 1976, and moving in a monetarist direction after accepting IMF support. The Conservatives' return in 1979, inspired by monetarism to the extent of imposing further public spending cuts in 1981 in the depths of a recession sparked by their restrictive 1979–1980 budgets, ended Godley's direct engagement with policymaking. But it re-united Cambridge economists, who rallied behind the nationwide campaign to restore a Keynesian approach to the re-emerging mass unemployment, and gave Godley the time and incentive for a more fundamental re-assessment of textbook and Treasury macroeconomics.

Several important features of Godley's reconceptualisation were already present by 1983, when he and Cripps co-wrote *Macroeconomics* (Godley and Cripps 1983) for a series edited by Kings College colleague Frank Kermode. There was full stock-flow consistency, with the full impacts of expenditure changes traced through a national economy (and briefly extended to an open economy) using the newly available device of personal computer simulations. Money was endogenous, created by private-sector lending even without the presence

of government. The analysis began with monetary flows, drawing immediate attention to the credit financing of production and borrowers' need to keep financing their debt. It supplied a system of inflation accounting that could calibrate the sector balance approach with real historical data, and allow an exploration of the stock-flow ratios that might affect the system's adjustment. However, the book's innovations were obscured by its abstract approach. The book received a lukewarm reception from other macroeconomists even in Cambridge, and baffled most general readers.

Godley's efforts to rectify these problems through a revised edition of the book were derailed when the UK Social Science Research Council (SSRC, later renamed ESRC) withdrew funding from his main DAE project, agreeing only to continue smaller-scale Europe-focused work by Cripps and forcing the CEPG to disperse. Although the DAE continued to expand and reached its peak external funding under Godley's directorship, the SSRC was more committed to the adjacent Cambridge Growth Project (CGP) launched by Sir Richard Stone and by 1983 led by Terry Barker and Terry Ward. It was also determined to scale down recurrent funding for macroeconomic model teams in general, by making them exploit opportunities to sell forecast reports and bespoke consultancy to government or business customers. The CGP successfully launched Cambridge Econometrics, while Ward joined Cripps in launching the Alphametrics consultancy.

Criticisms of his work by SSRC referees forced Godley to look more closely at the central concepts of mainstream macroeconomics (general equilibrium, real business cycles, rational expectations) and the econometric models that were being built around them. Their lack of realism – particularly in conducting analysis entirely in 'real' terms before eventually introducing an exogenous money to set the absolute price level, and extending a short-term analysis into the longer term without tracing through the stock effects of investment and credit flows – reinforced his belief that starting with sector balances and working downwards to behavioural patterns within sectors would shed more light on the macroeconomy than building

up from a rarefied model of households and firms making optimising choices under income constraints. Existing approaches wilfully neglected the obvious accounting requirements for every asset to have a corresponding liability (which needed to be financed), and every inflow to one sector to be matched by an outflow from another.

While looking for echoes of this dissent around the world, and finding them particularly in James Tobin's Yale group of economists linking macroeconomics to modern financial theory, Godley refined his critique and began setting out an alternative based on the systematic analysis of stockflow relationships across the public, private, financial and international sectors. He worked directly with a small group of DAE colleagues (notably Ken Coutts, Graham Gudgin and Michael Anyadike-Danes) and by long-running correspondence with former Treasury colleague Bryan Hopkin, now at Cardiff University. He steered collaboration between the DAE and the Faculty on macro-related policy issues, notably the project on de-industrialisation led by Ajit Singh, John Wells and Bob Rowthorn (Singh 1977; Rowthorn and Wells 1987).

Rowthorn's conflict theory of inflation (Rowthorn 1977), depicting a distributive battle between employers and organised labour which may cause a wage-price spiral if productivity growth slows, resonated with Godley's mark-up pricing approach. Rejecting any mechanical connection between upward wage or price pressure and labour-market tightness, Godley argued throughout his career that full employment and price stability could co-exist, with no need to assume a lasting 'Phillips Curve' trade-off or infer the need for incomes policy. United in gloom over prospects for the UK's social cohesion as it slid back into mass unemployment, Godley and Rowthorn also formalised the dynamics of public debt (Godley and Rowthorn 1994), identifying the relation between its real interest rate and the real GDP growth rate in setting the fiscal deficit (or surplus) consistent with a stable ratio of debt to national income.

The 1970s 'stable NAFA' dispute made Godley aware of the ways that his attention to essential stock-flow ratios (in this case of assets to income) could create a view of the macroeconomy which differed from that of flowfocused Keynesians as well as neoclassical theorists who dismissed Keynes as a special case of short-term wage, price or expectational rigidities. Godley handed on the DAE directorship in 1988, and dropped from public view until unexpectedly invited back to the Treasury in 1992 as one of the Chancellor's new Panel of Economic Advisers. The appointment was a backhanded reward for correctly forecasting the course of events in 1990–1992, when the pound's entry into the European exchange-rate mechanism at an unrealistically high rate had widened the trade deficit, plunged the economy into recession, and forced a severe devaluation to rescue the economy from absurdly high interest rates.

Although panellists were selected for their variety of views, the government's reluctance to raise interest rates as devaluation revived growth led Godley to find some common ground with the more monetarist members, whose attention to the sources of money and financial sector complexity he had always respected. His stock-flow-consistent modelling approach was now attracting particular interest from policymakers in small economies with heavy exposure to trade and financial flows, highlighted by a commission to build a model of the Danish economy for the country's central bank. His interest in balance sheets, which revealed the need for continuously financing assets and the difficulty of doing so when their values fell, also led him to begin contact in the early 1990s with the Levy Economics Institute at Bard College in upstate New York, where Hyman Minsky had also moved.

Around this period, Godley (1992) wrote a prescient critique of the rules devised in the Maastricht Treaty for European Monetary Union, noting that giving up fiscal and exchange rate policy at the domestic level – without creating European institutions to ensure appropriate automatic stabilisers – would make the Eurozone prone to instability and deflation. His positions were refined more formally later, in Godley and Lavoie (2007a), and provided an insightful presentation of the causes of the "sovereign debt crisis" of the 2010s in the Eurozone.

While in the United States, Godley continued to develop his stock-flow-consistent methodology as a coherent theoretical framework, while at the same time developing a model for the US economy, grounded in his approach to the three-sector fundamental identity. The first application of this model was published in Godley (1999), where he presciently warned that the rising indebtedness of the private sector would have precipitated a crisis, which indeed materialised in 2001. In the following years, Godley pointed out, in a number of Levy Institute Strategic Analyses, that the recovery in the US economy was again based on rising indebtedness, and therefore deemed to end abruptly. After the Great Recession of 2007, his contribution was listed among the few who predicted it timely (Bezemer 2010; Schlefer 2013).

In 2002 Godley returned to Cambridge, invited by Lord (John) Eatwell to join the Cambridge Endowment for Research in Finance. Continuing his association with the Levy Institute, Godley also started to work with Marc Lavoie from the University of Ottawa, who proved to be the perfect co-author to complete his lifelong project of publishing a book for popularising his methodology in a robust and coherent framework. The outcome, Monetary Economics (Godley and Lavoie 2007b), 'integrates, in the context of a dynamic stock flow model with watertight accounting, money and credit creation with the income/expenditure process, with assets allocated according to Tobinesque principles' (Godley 2000: 238). With analyses and simulations of a series of institutionally realistic models, with real and financial transactions fully accounted for and behaviour governed by key stock-flow ratios, this finally delivered the reformulation of Keynesian macroeconomics first attempted in his 1983 book with Cripps.

Helped by the online availability of its main models (translated from Godley's idiosyncratic programming by Gennaro Zezza), *Monetary Economics* quickly became the main reference for the growing literature on stock-flow-consistent modelling. As well as providing a platform for analysing and resolving numerous post-Keynesian debates over the behaviour of financialised, internationally connected economies, stock-flow-consistent models

found an immediate application in ecological economics, with the addition of natural asset stocks and ecosystem service flows (Jackson and Victor 2015; Dafermos et al. 2017).

Alongside his academic work, even when deeply immersed in theoretical refinement or model development, Godley kept up a continual stream of press and occasional broadcast commentary on the conjunctural state of the European and American economies. He also sparked a revolution in psychoanalytical practice by reporting his experiences with the prominent analyst Masud Khan (Godley 2001). In deteriorating health while visiting his daughter Eve in Northern Ireland, Godley remained there with her family until his death in 2010.

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