

# The National Accounts, GDP and the 'Growthmen'

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**Prime**

## **The National Accounts, GDP and the 'Growthmen'**

A review essay of Diane Coyle *GDP: A Brief but Affectionate History*, 2013

By Geoff Tily

*Reading GDP: A Brief But Affectionate History by Diane Coyle (2013) led to the question –when and how did GDP growth become the central focus of policymaking? Younger readers may be more surprised by the answers than older ones, with the details not commonplace in conventional histories of post-war policy.*

## Abstract

It is apt to start with Keynes, who played a far greater role in the creation and construction of National Accounts than is usually recognised, doing so in part to aid his own theoretical and practical initiatives. These were not concerned with *growth*, but with raising the *level* of activity and employment. The accounts were one of several *means* to this end. Coyle rightly bemoans real GDP growth as the *end* of policy, but that was not the original intention. Moreover Coyle adheres to a theoretical view where outcomes can only improve through gains in productivity, i.e. growth in output per unit of whatever input, which seems inseparable from GDP growth.

The analysis also touches on the implications for theory and policy doctrine in practice. Most obviously Keynes's approach was rejected on the ground of practical application. The emphasis on growth and an associated supply-orientation for policy seemingly became embedded through the OECD formally from 1961 and then in the UK via the National Economic Development Corporation of the 1960s (the relationships between these initiatives are of great interest but far from clear). In the UK various professional economists, not least Samuel Brittan, championed it. What was labelled the 'growthman' approach should be added as another of the many changes in the character of policy over the post-War age that amounted to distortions of Keynes's actual approach. Undoubtedly it was correct to reject this distorted approach, but it is terribly wrong to judge Keynes against it. Much more needs to be said on this.

### 1. Introduction

Coyle has written an engaging and stimulating story of GDP, setting a history of economic outcomes from the Great Depression alongside associated statistical initiatives, developments and debates. Her purpose is ultimately to investigate the on-going relevance of this most familiar of all economic statistics. But I am struck that the assessment is based on a specific economic perspective that is both narrow and contestable, albeit undoubtedly widely shared. Each episode around which the chapters are organised is viewed almost exclusively from the perspective of real GDP growth and understood as a result of productivity.

This essay first reviews her narrative, drawing out the specific role attributed to productivity (section 2). I then look at the implications for measurement, which are set in contrast to my own understanding of the original theoretical and practical motivation for the measurement of the economy, and, rather than for real GDP, for the National Accounts as a coherent whole. In particular I argue

that the National Accounts were originally concerned with the *level* of economic activity; *growth* came somewhat later. The original accounts were devised as a means first in the Great Depression to assess the multiplier, and second in the Second World War to aid policy aimed at deploying all idle resources. Both initiatives were concerned with increases in the level of employment and aggregate activity, in the wartime case, to the highest level possible. In section 4 the origins of the preoccupation with growth rather than employment are traced; the most significant development comes at the start of the 1960s, when the newly established OECD introduced a target for growth.

The manner of this and the associated policy transition to growth is of great interest. I take issue with Coyle's approach and her ultimately lukewarm endorsement of GDP. But my own assessment arrives at a similar destination, contesting more fundamentally how growth became the end of policy.

## 2. The narrative around productivity

The first chapter includes an account of the historical origins of National Accounting extending back to 1665 and William Petty, including the significant interventions of Marshall and his contemporaries and followers (why not name them? - Flux, Bowley and Stamp). Rightly Colin Clark's work is emphasised, notably as contributions to the deliberations of the newly established (in 1930) Economic Advisory Council.<sup>1</sup> These developments came ahead of those in the US; though the US were quicker off the mark in bringing the production of figures onto an official footing, with Kuznets the most important personality of course. For Coyle these significant initiatives in both Britain and the US were motivated by the need to understand the Great Depression and then to aid the conduct of the Second World War.

In spite of citing my own attempt to set the record straight (2009), Coyle introduces Keynes into the narrative in the conventional manner: as merely a supporter of the development of such statistics and as the author of a theory or policy approach that required such statistics. In the 1940 pamphlet *How to Pay for the War*, he bemoans the condition of statistics available for the planning of the war effort (Keynes, 1931, p. 381). His *General Theory* is then one of three factors that, according to Coyle, motivate demand management policies after the war; the others being the development of National Accounts and of econometric modelling (pp. 19-22). Importantly, in Coyle's interpretation, this is

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<sup>1</sup> A point I missed in my previous essay, but that is important to the wider history of economic advice to the UK government and the eventual creation of the Government Economic Service; a story for another day.

explicitly set in terms of growth: “The theory ... became the basis for a more interventionist approach to government economic policy from the 1940s onwards, using fiscal policy ... and monetary policy ... to target a higher and less volatile rate of growth for the economy” (p. 19). As will be discussed, while Coyle recognises that Keynes was (more than) sceptical about econometric modelling, she does not realise that he also had nothing to say about growth (see n. 9). Nonetheless, from here on, her discussion is focused solely on growth.

Great importance in terms of post-war outcomes is attributed to the Marshall plan (“one of the most visionary acts of statesmanship ever put into practice”, 57). The Organisation for European Economic Cooperation (OEEC) was then not only important to the allocation of funds but also to “gathering national accounts figures for all the member countries and making comparisons among them” (42). On Coyle’s interpretation: “the growth of real GDP is the single most important benchmark of how an economy is doing, and it was particularly important in the immediate post-war years. Was the Marshall plan working?” (42).

Her answer: “Not only was it working, it ushered in three decades of strong growth and low inflation” (42). The explanation for this the Golden Age is set out in a curiously discursive manner in spite of its entirely conventional nature. First she emphasises the repair and replacement of assets destroyed in the war, and an associated 1969 assessment by Ferenc Janossy “that the postwar economy had just been reverting to its pre-1914 trend” (44). The rest is pure supply-side: “Particularly important was the continuously improving level of education among the workforce. In addition, a succession of new technologies became available and entered into wider use ... Perhaps as important was the steadily improving availability of consumer goods ...”. The performance hence follows trend growth increasing as a result of supply-side gains, and the Marshall Plan and other ‘Keynesian’ demand management policies permitting economies to take advantage of this potential, in spite of an implied very large output gap immediately after the war.

“A Crisis of Capitalism” (Chapter 3) puts paid to the post-war era, with a “switch” from “strong” to “disappointing” (60) growth (and stagflation, of course). While the cold war, environmentalism and the developing world are touched on, the essential explanation for the crisis is again conventional. Policymakers (and the wage-earning public) mistook the high growth rates of the post-War era as permanent and mistakenly used demand management (and wage bargaining) to attempt to sustain it. “Human nature and politics being

what they are” (64). Environmentalism also enters the narrative via growth through the celebrated *Limits to Growth* Report, published in 1972.<sup>2</sup>

Passing over the traumas of the 1980s (beyond an appeal to the veracity of monetarism, 78), the discussion turns to ‘1995-2005: The New Paradigm’ (chapter 4). These events are introduced by an assessment of the state of the art of the theory and empirics of growth. Endogenous growth models were helping better to explain technology, with understanding further advanced by Maddison’s database. Previously such analyses were limited as follows: “The number of countries for which GDP data were available increased slowly, and had reached only sixty as late as 1985. For many of these, the data were of poor quality” (78). It is not the place to discuss how this miracle of empirical excavation was achieved. Coyle sees Maddison’s work on the one hand as an “essential resource” (79), but on the other bemoaning economists using the figures “blithely” (80).

The chronology continues as follows: “In a classic example of historical serendipity, the ability to look empirically at how technology brings about economic growth coincided with a period when a new technology was stating to spread so widely that it seemed bound to boost the economy” (80). The effects of this revolution took time to materialise in the data, but when they did they were significant. Coyle builds it up: “A recession in the early 1990s gave way to the longest period of expansion in GDP the United States had seen since the dawn of capitalism” (82). But then brings it down: “the New Economy hype looks almost delusional” (83). Again, the surge in productivity was not sustained, and again it was misinterpreted. This time Coyle portrays official statisticians as confusing the picture. She suggests the implementation of quality adjustment and capitalisation of own-account software “may well have given the impression of a greater acceleration in growth than was the case” (90).

The fifth chapter addresses ‘Our Times: The Great Crash’, and again the messenger is shot. First there is a lengthy discussion of how GDP and wider understanding of the economy was distorted by the evolving international rules for the treatment of the financial sector. There is the implication that this misled

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<sup>2</sup> Coyle gives no reference; according to Wikipedia: “Funded by the Volkswagen Foundation and commissioned by the Club of Rome it was first presented at the St. Gallen Symposium. Its authors were Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III. The book used the World3 model to simulate the consequence of interactions between the Earth's and human systems”. [http://en.wikipedia.org/wiki/The\\_Limits\\_to\\_Growth](http://en.wikipedia.org/wiki/The_Limits_to_Growth) ; <http://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf>

polymakers, a point made explicit in a *Financial Times* account of the same issues: “If banking had been subtracted from GDP, rather than added to it, as Kuznets had proposed, it is plausible to speculate that the financial crisis would never have happened” (Pilling, 2014).

Coyle’s wider challenge to the dominance of finance in economic activity and policy is important, but the statistical issues are surely not so clear-cut. It seems hard to deny the scale of the financial sector, not least given the scale of employment and associated tax revenues (ahead of the crisis). The sustainability and desirability of this state of affairs is a different matter, and not obviously one for the national accountants. Contesting the treatment of finance is hardly new (though notably the criticisms were less apparent when the changes were first made). But her assessment of the causes of the difficulties is inadequate, amounting to little more than *statisticians* being unable to imagine “that banking could be subtracting value from the economy” (100), and now with *economists* beginning “to suggests methods” to rectify matters (104). An obvious point is that most senior national accountants in international institutions have tended to be economists. But more substantially, as Coyle recognises, Brett Christophers’s (2013) assessment of whether banks are regarded as productive is relevant here. He is alive to a potential role for lobbying, with finance asserting and championing its own productiveness. But fundamentally he argues that the difficulties arise with the neo-classical theory to which he sees national accountants adhering. Inherent to this theory are misunderstandings of the nature of banking (he justly offers Keynes as an individual with his facts straight). Today’s national accountants would have to speak for themselves, but certainly the concept of ‘financial *intermediation* services directly measured’ (FISIM) appears at odds with the ability of banks to create credit, as recently elaborated by the Bank of England. “Indeed, viewing banks simply as intermediaries ignores the fact that, in reality in the modern economy, commercial banks are the creators of deposit money” (McLeay *et al*, 2014, p. 15).<sup>3</sup>

In my view the evolving international rules for classification are likely to have been a symptom of the wider political and institutional liberalisation of finance. Frankly it seems ludicrous to regard them as cause.

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<sup>3</sup> SNA 2008, paras. 6.163-6.169 on FISIM are in the neoclassical tradition. Even the idea of the circular flow seems at odds with the nature of a monetary economy, with money created at will and from nowhere by the central bank and monetary and financial institutions as book entries that are scored on the financial account.

Second, Coyle turns to the wider definitional issues related to well being and happiness, that have been particularly prominent since President Sarkozy commissioned Sen-Stiglitz, but that have been ever present, not least thanks to Kuznets. Following Mitra-Kahn (2012), Coyle recognises the irony in Kuznets being regarded as the creator of GDP, when he had championed the welfare interpretation against the productive interpretation that prevailed, and that had already been devised first in the UK.

The narrative then runs full circle. Having understood post-War economic history solely through the lens of productivity, Coyle then asserts that productivity figures are increasingly meaningless in a digital / non-manufacturing economy as one of three arguments to contest the on-going relevance of GDP (sustainability and complexity are the others)<sup>4</sup>. Nevertheless in her final chapter Coyle concludes “that we should not be in a rush to ditch GDP” (121).

### 3. Implications for measurement

At first sight a striking omission of the book is any account of the various uses of GDP, which would seem of importance to any assessment of relevance. Even given its prominence throughout the book, Coyle does not explicitly use productivity to motivate the need for and definition of GDP. Certainly this is not the approach of those setting the international standards, as will be discussed below. Moreover even if a need to measure productivity did provide principles for setting coverage and method, it is hard to see how the productivity worldview creates any *actual need* for measurement, except out of curiosity for a retrospective, quantitative assessment of performance in aggregate. Though given its apparently repeated potential to induce over-optimism in policymakers, this might even be counterproductive. And plainly if you are interested in performance, other approaches like ‘general well being’ might be equally valuable or even preferable.

But theoretical perspective and practical policy needs must be important in setting the standards for GDP. These needs are inconsistent with Coyle’s argument on both present and past views.

Today GDP and the National Accounts are examined in laborious detail by policymakers, as part of assessments of overall momentum, trend and the output gap, the ‘balance’ of output and demand/expenditure on industrial and

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<sup>4</sup> The complexity argument is a little bizarre, including the suggestion that the great variety of Cheerios breakfast cereals is an addition to welfare.

sectoral bases, further aspects of affordability and, through the income and wider sector accounts, sustainability issues including leverage. Indeed the sectoral balance sheets provided a signal and measure of the indebtedness that had built up ahead of the great recession that Coyle interprets only through productivity. Since the crisis, nominal GDP figures have been a critical factor in assessments of fiscal sustainability (whatever your view of the desirability). The SNA (1993) motivates its own historical account in part by “an immediate [post-War] need for comparable measures of national income as a basis for apportioning the expenses of international organisations” (xxxvii), a factor of on-going importance since the EU fourth resource (based on gross national income).

But both the Coyle approach and that of today’s policy makers differ from the original rationale for the National Accounts, as is partly recognised in the first chapter. In the early 1930s (not the 1940s, 17), Keynes and the Council of Economic Advisers wanted to quantify the newly devised idea of the multiplier. In the 1940s, Keynes wanted to specify accurately his proposals for a deferred pay scheme, to counter the possibility of inflation in the war and slump after the war. His approach was formalised in the 1941 Budget, which set for the first time an assessment of the existing level of income against the potential level of income. Neither use required an assessment of real GDP. The multiplier required a breakdown of expenditure by what are now known as sectors.<sup>5</sup> *How to Pay for the War* included rudimentary accounts for households and government and led to the full sectoral accounting perspective, within which GDP is merely one of many balancing items.

These wider uses offer a different basis on which to judge the relevance of GDP; they also help clarify some definitional issues. While Coyle gives great play to GDP as arbitrarily defined (e.g. should it include housework?), this is less so from the national *accounting* perspective. As she momentarily recognises, in *monetary terms*, the measurement of the economy is relatively clear-cut. Plainly there are considerations related to the production boundary, but these are the subjects of the serious and substantial methodological deliberations that lead to the occasional updates of international standards. Most measurement issues that she debates are concerned with deriving volume measures (e.g. services, government).<sup>6</sup>

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<sup>5</sup> Coyle attributes importance to the multiplier debate (23), but does not link it to the development of National Accounts; see e.g. Colin Clark’s (1938) ‘Determination of the Multiplier from National Income Statistics’ and my own more recent effort (Tily, 2009).

<sup>6</sup> “But the proper place for such things as net real output and the general level of prices lies within the field of historical and statistical description, and their purpose should be

To reiterate: the original standards were defined in the context of a framework for calculating the extent of national income, expenditure and production and the associated allocation by sector.

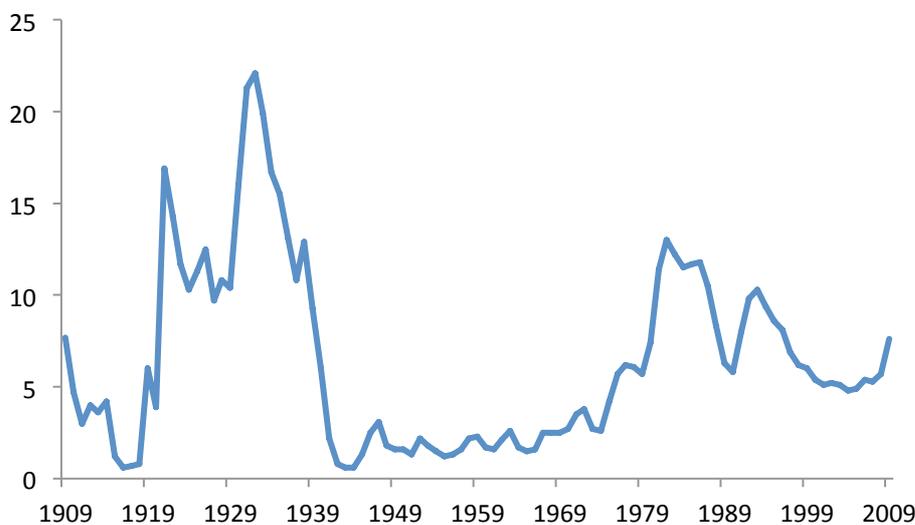
Moreover the development of national income accounting was as a means to an end, not as an end in its own right. The accounts were developed to support policy: to resolve the unemployment crisis of the Great Depression and to aid the deployment of national resources to their fullest possible extent for the conduct of the Second World War. The value of GDP, or rather at that stage 'national income', was of only slight interest.

Moreover, it is, I think, fundamental to recognise that these theoretical and practical initiatives were aimed at the *level* of activity – at the increased and then full employment of resources and the full extent of national production – rather than the *growth* of activity. At this stage there was no notion on the part of policymakers that the level of activity might be encouraged to grow in any systematic or uniform way from year to year; the intention was achieving one-off level shifts. There can be no doubt that they were successful in this aim, and in sustaining these gains as the post-war golden age. Notwithstanding the part that the National Accounts may have played in achieving this goal, the shift is most appropriately shown through a time series of unemployment figures.

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to satisfy historical or social curiosity, a purpose for which perfect precision -- such as our causal analysis requires, whether or not our knowledge of the actual values of the relevant quantities is complete or exact -- is neither usual nor necessary. To say that net output to-day is greater, but the price-level lower, than ten years ago or one year ago, is a proposition of a similar character to the statement that Queen Victoria was a better queen but not a happier woman than Queen Elizabeth -- a proposition not without meaning and not without interest, but unsuitable as material for the differential calculus. Our precision will be a mock precision if we try to use such partly vague and non-quantitative concepts as the basis of a quantitative analysis. (Keynes, 1936, p. 40)

## UK unemployment rate, per cent



### 4. The ‘Growthmen’

According to Dow’s (1964) survey of the British economy, the primary concern of post-war policy was maintaining full employment and containing excess demand so that inflation was also contained. Relevant analytics were set out in a published annual *Economic Survey* (from 1947; Dow, 27). Growth came onto the economic agenda somewhat later, over the 1950s, apparently in part as a result of international initiative. In the SNA93 (System of National Accounts, 1993) there is a discussion of how a requirement for volume measures and the development of associated methodologies intensified over the 1950s: “One indication is that a long paragraph placed prominently in the preface acknowledged that the 1953 report was confined to accounts in current money terms and recognized the need for constant-price measures” (p. xxxix). Dow (1964, 34) suggests that the *Economic Review* was primarily based on real-terms measures for the first time in 1952. But it seems the OECD took the most significant initiative. Samuel Brittan’s *The Treasury under the Tories, 1951-1964* reads like a manifesto for the ‘growthmen’ (his label, p. 141).<sup>7</sup> He records that the OEEC became the OECD on 30 September 1961; on 17 November the OECD agreed a fifty per cent growth target for 1960-70. Almost in exact parallel the Conservative Government instigated the National Economic Development Corporation; they “explore implications of four per cent growth rate” in May 1962 and “approve four per cent growth target” in February 1963. (The OECD

<sup>7</sup> Interestingly, he also champions measuring well-being: “Although happiness is not measurable, it ought to be possible to calculate a new index, which would be a better measure of economic welfare than the present G.N.P. series” (*ibid.*).

target was equivalent to 4.1 per cent *p.a.* At the time, the unemployment rate in the UK was 1.2 per cent.) In the technical/technocratic space, policy was moving toward setting a trajectory for demand growth against a trajectory for supply growth, *an approach that has underpinned policymaking ever since*. This is exemplified by a contemporaneous Cowles Foundation paper from 1962, ‘Potential GDP: Its Measurement and significance’ by Arthur Okun.<sup>8</sup> Notably the Council of the OECD adopted their ‘Code for Liberalisation of Capital Movements’ on 12 September 1961, presumably billed as an enabler for this ludicrous ambition of rapid and relentless growth, regardless of the extent of capacity in the labour market.

## 5. Conclusion

In 2000 the US Bureau of Economic Affairs celebrated GDP as “One of the Great Inventions of the 20<sup>th</sup> Century; Coyle dismisses this too lightly as an “understandable exaggeration” (6). As her work shows, GDP, the National Accounts and other economic statistics have provided a – the – framework for the conduct of macroeconomic policy since the end of the Second World War, a framework that began to evolve from the 1930s (and that has endured even in spite of vogues for various intermediate policy targets: growth, money supply, exchange rates, inflation and, most recently but rather vaguely, unemployment). Ahead of these innovations macroeconomic policy might be said scarcely to have existed, at least when it operated only according to the narrow confines of the gold standard. So these were momentous changes. As well as policy, the whole range of economic statistics has provided information for the better understanding of economic events, not least during the present crisis. Moreover regular scheduled releases of economic statistics in countries across the world provide a real-time commentary on economic developments and hold the authorities to account in a manner that is now invaluable or even inherent to democratic debate. With on-going and extensive uncertainties in the

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<sup>8</sup> <http://cowles.econ.yale.edu/P/cp/p01b/p0190.pdf>. Thanks to Lawrence Newland at HM Treasury for sharing this with me. A fuller history of these matters would be of some interest, but the point here is simply to establish the position at the start of the 1960s, rather than trace its exact origins. It is worth mentioning that others wanted to move onto this territory in the immediate wake of the *General Theory*. Notably Roy Harrod, a difficult figure to unravel, harassed Keynes relentlessly with his theories of warranted growth rates, published eventually in 1939 in the *Economic Journal*. Immortalised as Harrod/Domar, the theory was regressive in comparison to the *General Theory*. Much later Harrod acknowledged: “You see, the use of growth as a regular economic concept had hardly come in before the war ... I don’t see how Keynes can have been expected to have systematic idea on growth; his systematic ideas related to full employment” (Harrod, 1974, p. 17).

outlook for the world economy and the conduct of policy, it would seem very premature to dispense with these vital tools.

But Coyle's argument leads us from statistical to equally profound economic matters. As I have tried to indicate, the specific policy mechanisms that evolved were not so clearly those envisaged by the instigators of the original mechanisms. In particular there was a shift from understanding the world in terms of levels to growth, a change that seems of immense significance and deserving of further investigation, not least on Keynes's behalf. The shift from full employment in the UK was motivated by comparisons of growth for large European and the US economies (importantly, Blackaby, 1963). Whether the reliability and trustworthiness of the figures were adequate to support a judgement of such magnitude remains, as far as I can judge, an open question. My sense is that there was a substantial lack of respect on the part of the economics profession and maybe too the political establishment (certain individuals apart) for the extent of the achievement in obtaining full employment, and moreover doing so in a period of such geopolitical turbulence.

In contrast to Coyle's argument, it could be argued that the 'crisis of capitalism' of the 1970s was not a consequence of trying to ape what she regards as the historic growth rates of the golden age; instead the golden age itself was undone by attempting to achieve a growth target that was not supported by any substantial theory or substantive empirical record, and that was surely wildly implausible in conditions of virtual full employment.

Certainly in the UK, GDP and the National Accounts were originally tools or means to the end of full employment. With the shift from levels, growth became an end in its own right. Coyle is right to contest this central position for growth, but it follows exactly from her own theoretical interpretation and narrative, albeit one that might be widely held. Indeed her assessment in part constitutes a retrospective application of a 'growthman' (with apologies) view to events prior to the 1960s that were not understood through growth at the time. Moving to the present, we hardly need General Well Being or some such to tell us something has gone very wrong with the economy, policy and associated social outcomes. And plenty are cynical about moving the goalposts under such conditions. Perhaps it is the 'growthman' theory not the practice that is the main problem.

## References

- Blackaby, F. T. (1963) 'The Recent Performance of the British Economy', *The advancement of science*, London: British Association for the Advancement of Science, 1939-1976, pp. 489-98.
- Brittan, Samuel (1964) *The Treasury under the Tories, 1951-1964*, Harmondsworth: Penguin.
- Christophers, Brett (2013) *Banking Across Boundaries: Placing Finance in Capitalism*, Chichester: Wiley-Blackwell.
- Clark, Colin (1938) 'Determination of the Multiplier from National Income Statistics', *Economic Journal*, 48 (191), 435-48.
- Dow, J. C. R. (1964) *The Management of the British Economy, 1945-60*, Cambridge University Press.
- Harrod, R. F. (1939) 'An Essay in Dynamic Theory', *Economic Journal*, March.
- Harrod, R. F. (1974) 'Keynes's Theory and Its Applications', in D. E. Moggridge, Ed., *Keynes: Aspects of the Man and his Work*, Macmillan: London and Basingstoke.
- Keynes, J. M. (1936) *The General Theory of Employment, Interest and Money*, Basingstoke: Macmillan.
- McLeay, Michael, Amar Radia and Ryland Thomas (2014) 'Money creation in the modern Economy', Bank of England *Quarterly Bulletin*, 2014 Q1, 14-27.
- Mitra-Kahn, Benjamin (2012) *Redefining the Economy: How the 'Economy' was Invented, 1620*, PhD dissertation, City University London.
- Pilling, David (2014) 'Has GDP outgrown its use?' FT.COM/MAGAZINE JULY 5/6 SNA 2008, System of National Accounts.
- Tily, Geoff (2009) 'Keynes and the financing of public works expenditures', Post Keynesian Study Group website:  
<http://www.postkeynesian.net/members/working%20papers/Tily%2025082009.pdf>
- Tily, Geoff (2010 [2007]) *Keynes Betrayed: The General Theory, the Rate of Interest and 'Keynesian' Economics*, Basingstoke: Palgrave Macmillan

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