

Keynes, Public Debt and the Complex of Interest Rates

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‘Keynes on the rate of interest showed himself in a typical mood: revolutionary in thought and very cautious in policy.’

James Meade, 26 February 1945 (Howson and Moggridge 1990: 46)

‘Words ought to be a little wild, for they are the assault of thoughts upon the unthinking. But when the seats of power and authority have been attained there should be no more poetic licence.’

John Maynard Keynes, 19 April 1933 (Moggridge *et al.* 1971–1989, vol. XXI: 244)

1. INTRODUCTION

The role of public debt in Keynes’s economic policy thinking is a question of considerable interest – most obviously, because deficits and debt have always been a prominent and important motif of debates around Keynesian economics. In a pair of companion articles I have sought to reconstruct Keynes’s views on public debt, in the first instance, via a comprehensive examination of his responses to the position of Abba Lerner (Aspromourgos 2014b). The conclusion of that investigation is that Keynes consistently offered *qualified* endorsement of Lerner’s ‘functional finance’ doctrine (Lerner 1943; 1944, esp. chapter 24) – the qualifications particularly turning on Keynes’s more nuanced view of the relationship between theory and policy and his consequent attentiveness to policy management of the psychology of the debt market. Thereby, Keynes rejected simple, mechanical application of Lerner’s doctrine to public finance practice. The second article considers, more generally, the policy levers and policy options available for reconciling full-employment demand growth with public debt management, when the debt trajectory is itself also an objective of policy, rather than being treated as a mere consequence of the pursuit of other policy objectives, of no policy interest in itself, as is the case for Lerner (Aspromourgos 2014a).

Keynes’s explicitly stated reasons for qualifying his endorsement of functional finance were: ‘false consciousness’ (my term) concerning public debt, that could generate interest rate and profitability expectations adverse to the pursuit of full employment; widening public sector deficits; ill consequences for distribution; and debt stabilizing at undesirably high levels. But I further suggested that these were unlikely to be Keynes’s only reasons, and so inferred from his wider commentaries on public debt – commentaries that do not actually refer to Lerner or functional finance – some additional probable reasons: the possibility of debt growth placing upward pressure on interest rates, in particular steepening the yield curve, for reasons other than false consciousness; excess-demand inflation simultaneous with involuntary unemployment, due to structural imbalances; and foreign-owned, especially foreign-currency-denominated, public debt (Aspromourgos 2014b: 427–9; also, on the interest rates issue, 2014a: 583–5). It is the first of the latter three issues that is not at all addressed by Lerner. In those earlier articles this possibility of public debt trajectories placing upward pressure on the level of interest rates, or steepening the term structure of rates, was not argued in detail, particularly with respect to the latter yield curve aspect (although extensive supporting citations were

provided, in particular, from Moggridge *et al.* 1971–1989, vol. XXI; hereafter cited as *CW*, with relevant volume number).

The purpose of this article is to examine more fully Keynes's understanding of the possible influence of public debt on interest rates, and on the term structure in particular. The focus is on his writings from the 1930s forward, thereby largely leaving aside what may be called 'the pre-Keynesian Keynes'. Nevertheless we begin in section 2 with the *Treatise on Money* (1930; hereafter, *TM*). Its fundamentally orthodox, pre-Keynesian character does not necessarily mean that every element of it is rendered obsolete, in Keynes's mind, by the new theory of 1936 – and unsurprisingly, some pertinent aspects of Keynes's thinking from 1930 forward are evident also earlier (Moggridge and Howson 1974: 226–36). Section 3 then shows how the multiplier becomes a mechanism in which debt-financed public investment generates matching private saving plus tax revenues, via variations in aggregate activity levels and prices. As a consequence, it becomes possible for Keynes to conclude that increasing public debt *need not* place upward pressure on the level of interest rates, so long as policy can successfully manage the psychology of the debt market (section 4). This particularly concerns long interest rates, and hence, the term structure and market expectations of the future course of interest rates, leading to consideration of Keynes's theory of the term structure – a theory which enables his conviction that policy can manage and shape long rates (section 5). The conclusion addresses also the question of whether Keynes's caution concerning public debt and interest rates remains relevant today (section 6).

2. THE *TREATISE ON MONEY*

Public debt is not much discussed in *TM* and only those instances of direct relevance to our subject are considered here. Keynes likens 'War-expenditure, not covered by taxation' to 'a sudden increase of investment' (*TM*: I, 283n; also II, 171; *CW*: XXI, 384, this latter instance being after 1936). Since his analysis of saving/investment equilibration in the *Treatise* is in orthodox, marginalist terms (*TM*: I, 154–5, 185–220) – such that an exogenous increase in private investment *ceteris paribus* increases the 'natural' (and sooner or later, the market) rate of interest – this implies that an increase in debt-financed government expenditure, at least of a substantial magnitude, raises interest rates. (Debt-financed war expenditure can be conceived of, alternatively, as an exogenous decrease in public saving: *TM*: II, 167; also in Keynes 1936: 128n (hereafter, *GT*); *CW* XIII: 232, 458.) It is noted that deflationary post-war policies greatly increased 'the real burden of the War Debt' (*TM*: II, 181) and the benefit of some inflation for alleviating real debt burdens, 'of which National Debts are the most important', is mentioned (*TM*: II, 393). Providing an interpretation of the British 1890–96 deflation, Keynes concludes with this comment:

Borrowing by the Government and other public bodies to finance large programmes of work ... were probably the only ways of absorbing current savings and so averting the heavy unemployment of 1892–95. But any such policy was of course utterly incompatible with the ideas and the orthodoxies of the period. (*TM*: II, 170; cf. 376)¹

The issue of the term structure actually has a more significant place in *TM*, particularly by way of Keynes arguing for the capacity of short rates to influence long rates. This is with a view to completing his purpose in the book as a whole, of providing a comprehensive account of the transmission mechanism. In Keynes's 1930 theory the crucial element in explaining price-level behaviour is the balance between aggregate investment and aggregate saving, that balance in turn being determinable by the level of market interest rates relative to 'the natural rate of interest', where the latter concept is identical to that of Knut Wicksell.² Hence the capacity of policy to achieve price stability requires policy to be able to sufficiently influence the market interest rates that are understood by Keynes to regulate investment, and most importantly, investment in fixed capital (*TM*: II, 348). The term structure enters the picture at this point because for fixed capital it is long rates that matter:

The main, direct influence of the Banking System is over the short-term rate of interest. But when it is a question of controlling the rate of investment, not in working capital but in fixed capital, it is the long-term rate of interest which chiefly matters. How can we be sure that the long-term rate of interest will respond to the wishes of a Currency Authority which will be exerting its direct influence, as it must [*cf. GT: 203*], mainly on the short-term rate? (*TM: II, 352*; also 187–8, 195, 347)

Keynes earlier draws an emphatic conclusion that the only instruments available to monetary policy are the central bank discount rate and open market operations, rejecting the possibility of any direct control over the quantity of money (*TM: II, 211*; also 226–7, 363).

The point of departure for linking short and long rates is the proposition that if the sequence of short (say, ninety-day) rates over the course of, say, the next twenty years was known by market participants with confidence, then the twenty-year interest rate would reflect that sequence of short rates – implicitly, due to arbitrage (*TM: II, 352–3*; the Bank of England discount rate, ‘bank-rate’, applied to ninety-day bills: I, 200). That being so, a change in the current short rate, *in and of itself*, would exercise only slight influence on the long rate. Keynes argues that the influence is ‘much greater’ than this for a number of reasons that need not detain us, except to note that they indeed include the capacity of current short rates to influence expectations of future short rates (*TM: II, 353, 356–62*).

In a further thread of argument pertinent to the yield curve, in the context of assessing ‘bank-rate policy’ versus market operations, Keynes affirms the capacity of the latter to directly influence long rates (*TM: II, 251–2*; also 231–2). And in the penultimate chapter of the book there is a subsection on market operations ‘to the point of saturation’: ‘extra-ordinary methods’, ‘extreme measures’, only likely required if ‘conditions of acute slump or boom have been allowed to develop’ – although it is slumps rather than booms that are more likely to ‘defy all normal methods of control’. While unprecedented, such measures would be ‘no more than an intensification of the normal procedure of open-market operations’. What Keynes has in mind here is ‘taking measures which would have the effect of causing the total volume of bank-money [deposits] to depart widely from its normal volume, whether in excess or in defect’, with a view to accommodating abnormal demand for liquidity or for securities: when there is ‘obstinate “bullishness” or “bearishness” towards securities ... the Central Bank should carry its open-market operations to the point of satisfying to saturation the desire of the public to hold savings-deposits, or of exhausting the supply of such deposits in the contrary case’. Such a policy with respect to slumps confronts constraints which also need not detain us (*TM: II, 369–74*; *cf. 386–7*; and *CW XIII: 254*, in relation to the notion of short-period changes in the natural rate). But all this, it may be emphasized, for Keynes in 1930, pertains to extreme circumstances not normal conditions.

It is worth finally noting from *TM* that the 1930 slump is first and foremost attributed to market rates of interest since the mid-1920s having been held above the natural rate, precipitating a cumulative downturn of both the price level and aggregate activity (*TM: II, 377–82*; echoed in newspaper articles the same year – *CW IX: 132–3, 321*). Again, the detail of the argument may be left aside. What is of interest here is that by way of this interpretation, Keynes seeks to reconcile his conviction that too high market rates of interest are a fundamental cause of the slump, with his then orthodox theoretical framework. His conclusions prefigure a persistent theme in his subsequent writings during the 1930s, that interest rates, short and long, are too high and are capable of being reduced by policy (but during those later years these views will break out of the orthodox straitjacket): the prospect for the next two decades is ‘a strong tendency for the natural-rate of interest to fall’, unless delayed by ‘Central Banking Policy preventing the market-rate ... from falling as fast as it should’ (*TM: II, 207 – 08*); lasting economic recovery requires ‘a very great fall in the long-term market-rate’, which needs to be ‘accelerated by deliberate policy’ (*TM: II, 383*); lenders have become ‘accustomed to high rates’ because notions of ‘the normal and the permanent’ are ‘mainly fixed by actual experience of the last fifteen years’ (*TM: II, 384*); for appropriate adjustment of rates, it might suffice ‘merely to produce a general belief in the long continuance of a very low rate of short-term interest’ (*TM: II, 386*).

3. THE MULTIPLIER AND DEBT FINANCING

The key theoretical elements in Keynes's transition to *GT* can be summarized as follows:

1. The fundamental breakthrough is the development of the multiplier mechanism and its application to the determination of aggregate activity levels. Movements in aggregate activity cease to be a subsidiary element in the dynamics of price-level disequilibrium, and are no longer a function of wage or price inflexibilities, as in *TM*, but rather are an expression of a theory of equilibrium aggregate activity in which full employment is a special (and unlikely) case.³
2. This mechanism entails the coordination of (planned) investment and saving via the former determining the latter through multiplied changes in (actual) aggregate activity and income, including possible price-level changes (*GT*: 63–5, 82–5, 117, 375).
3. This leads to Keynes abandoning the notion of a natural rate of interest (although somewhat incompletely) and positing a monetary theory of interest, or the notion of the level of interest rates as a mere convention – a customary norm resulting from the interplay between central bank behaviour and money market sentiment (Aspromourgos 2007: 514–17).
4. Just as the new theory of aggregate activity levels and income fundamentally changes the financing issue with respect to private investment, since saving is no longer a *prerequisite* for investment, so it also changes it for the economics of debt-financed public spending. With public sector expenditure and income incorporated in the theory, the multiplier mechanism whereby investment determines saving becomes a mechanism in which private investment plus government expenditure generates an equal magnitude of private saving plus tax revenues.

The first three sets of propositions are posited here more or less without argument. International economic issues (e.g., external constraints on interest rate policy) are also put aside, in order to focus on the more general closed-system issues.

As indicated above, it is a continuous theme of Keynes's writings through the 1930s that policy-driven lower (short and long) interest rates are desirable and feasible, with a view to economic recovery – and a theme often also connected with rolling over outstanding public debt at lower yields (e.g., *CW*: XXI, 79, 100, 106, 114–15, 240, 256, 319, 332, 454, 488, 582; these instances cover dates from 1932 to 1939). An important element of context for this was the 1917 war loan issued at 5 per cent, which constituted more than a quarter of the total national debt and contributed a very large component of budget outlays – successfully converted to a 3.5 per cent basis in 1932 (Moggridge 1992: 542–4; a blow-by-blow account of the conversion operation is provided in Sayers 1976: 430–44). Policy management of interest rates with a view to persistent reduction in long as well as short rates is primarily aimed at supporting aggregate investment expenditures and hence economic activity levels, but with debt management an important secondary consideration. Open market operations to directly act upon long rates are a similarly consistent theme (e.g., *CW*: XXIII, 366; XXI, 200, 265, 271, 297, 327–8, 571; IX, 353; instances from 1931 to 1939). These policies are articulated in terms of returning interest rates to the lower pre-war or nineteenth-century levels and taking them even lower (e.g., *CW*: XXI, 141, 349, 403, 489). One may recall here also Keynes's *GT* 'euthanasia of the rentier' doctrine, favouring a zero real riskless interest rate (Aspromourgos 2004; 2011: 641).

Keynes's conviction in favour of 'cheap money' is bolstered by a more or less axiomatic belief that if the level of profitable aggregate investment is less than full-employment saving, the long rate *must be* too high – which is, after all, just a corollary of the notion of a well-defined and robust inverse relation between aggregate investment expenditure and the interest rate (a notion that persists in *GT*): 'So long as there is serious all-round unemployment I consider this *proves* that the equilibrium rate of interest is lower than the ruling rate' (*CW*: XXI, 345, emphasis added; also 200–01). While lower rates are no longer rationalized, as in *TM*, in terms of bringing sticky market rates down towards a lower natural rate, and Keynes explicitly repudiates the natural rate concept in *GT*, the

interest/expenditure functional relation implies the existence of a full-employment rate of interest – as he also makes explicit in *GT* – a ghost of the discarded natural rate concept, persisting in the new theory (*GT*: 31, 183, 202, 220, 242–4, 267, 309).⁴ Of course, public investment is also and increasingly advocated throughout the 1930s, a fact so well-known as to hardly require supporting documentation (Moggridge and Howson 1974: 237–9; for examples, *CW*: XXI, 60, 394).

Keynes's general position that lower interest rates are desirable and feasible then finds application in the further proposition that there is no intrinsic necessity for the general level of interest rates to rise in the face of economic recovery or expansion, whether due to increased private expenditures or expanded debt-financed public investment (e.g., *CW*: XXI: 314–15, 534–7). Certainly this is so for systems with excess production capacity – and even for systems without excess capacity, via recourse to policy instruments other than interest rates, notably, taxation (*CW*: XXI: 377–8, 536, 549, 557; Moggridge and Howson 1974: 231, 243–4). Keynes's conviction that expansion based upon debt-financed public investment need not be accompanied by upward pressure on rates is greatly reinforced by the multiplier analysis developed by Richard Kahn and James Meade (Kahn 1932; Meade 1993). For the earliest documented instance, Skidelsky (1992: 451) reports an 18/12/31 letter (not published in *CW*) in which Keynes outlines the investment-determines-saving logic to Harold Jeffreys. That logic is itself a corollary of the spending-determines-income logic of a demand-side theory of activity levels:

It is often said by wiseacres that we cannot spend more than we earn. That is ... true enough of the individual, but ... misleading if ... applied to the community as a whole. For the community as a whole it would be much truer to say that we cannot earn more than we spend. (*CW*: XXI, 126, 20/7/32)

[I]n the long run the [tax] revenue must depend upon an increase in the national income, and ... budgetary policy may itself be a potent instrument in determining what the national income is going to be. If we are allowed to spend, our spending will create new incomes, which can in turn be taxed, and will employ new men whose dole is now burdening the Exchequer. (*CW*: XXI: 194–5, 26/4/33)

In the March-April 1933 *Means to Prosperity* this multiplier mechanism is explicitly applied to both private and public increased spending and reduced saving: 'It is applicable to all *additional* expenditure made, not in substitution for other expenditure, but out of savings or out of borrowed money, either by private persons or by public authorities, whether for capital purposes or for consumption made possible by a relief of taxation or in some other way' (*CW* IX: 349).⁵ Similarly, in a fragment of *GT* draft, tentatively dated at 1933 by the editor, Keynes argues that the 'maxims of "sound" public finance' are largely based on the supposition that saving causes investment, going on to sketch a version of the paradox of thrift and the underlying multiplier mechanism (*CW* XXIX: 102–11; the paradox of thrift, also at XXI: 287–8, 19/9/33; *GT*: 84, 104–06, 110–12; XXVII: 390–91, March 1945). As he sums up his contrary view:

It is ... the act of investing which 'finds its way' into saving, rather than the other way round. On the other hand, individual acts of saving not only do not necessarily 'find their way' into investment, but are liable to have precisely the opposite effect. (*CW* XXIX: 106)

Keynes makes explicit that his investment/saving causation applies also to 'the cost of war' (*CW* XXIX: 107); i.e., to debt-financed government expenditure.

It is a corollary of the demand-side multiplier logic that debt-financed public expenditure, via the resulting expenditure-income equilibrium, generates private saving and tax revenues such as to ensure that the associated public sector deficit is balanced by a private sector surplus of equal magnitude. Thereby the notion that increased debt-financed public investment necessitates higher interest rates (to supposedly induce the additional saving) appears to be decisively undermined. To the best of our knowledge, this implication is first made fully explicit by Keynes in three documents,

of April, May and July 1939 that essentially provide variants of the same argument.⁶ For a closed system,

the income of the community will be equal to what the Government spends plus what individuals spend. ... Thus the excess of the community's aggregate income over what individuals spend, which is left over and available to pay taxes and loans to the Government, must be exactly equal to what the Government spends. (CW: XXI, 515)

Given a balance of aggregate expenditure and income, the public sector deficit will be matched by a private sector surplus of the same magnitude: 'The savings will come into existence *pari passu* with the expenditure. The only question which arises is as to the ultimate form in which they are held – whether as balances at the Bank of England, in Treasury bills and bonds, or in longer-dated Government debt' (CW: XXI, 516). 'The savings the Treasury is to borrow will be the result of the loan policy' (CW: XXI, 523).⁷

In a long memorandum sent to the Chancellor of the Exchequer and the Governor of the Bank of England, 28/5/39, Keynes elaborates the point, contrasting 'the old view' – that it is 'utterly impracticable to secure cheap terms when there is a necessity of borrowing an enormous sum' – with 'the new view' or 'modern theory':

If ... an increase in output and income is physically possible, the stimulus to demand resulting from the increased loan expenditure will bring about an increase of output both directly and indirectly. In such circumstances, it is mainly out of the increased incomes corresponding to the increased output that the increase of saving will occur. Moreover the loan expenditure will only be physically possible if the Government is successful in attracting resources for its own use; which means that a sum equal to the incomes generated by the Government's expenditure is physically withdrawn from consumption and must therefore be saved. Thus the required amount of saving necessarily comes about, *irrespective of whether the rate of interest rises or falls*. (CW: XXI, 538–9; emphasis added)

The qualification that the saving will come 'mainly' from 'increased output' is tacitly allowing for some possible price-level change as well. The July 1939 document, a two-part article in *The Times*, is a revised version of this memo, very similarly worded with respect to the above-quoted May text (CW: XXI, 556). The logic of aggregate expenditure-income balance and associated public/private inter-sectoral balance is subsequently systematically applied to war finance and in particular, to the British public sector budgetary framework from 1941 forward – with the balance partly brought about by inflation in a near-full-employment economy, although Keynes is vehemently opposed to using inflation as a policy instrument (e.g., CW: IX, 416–22 (from Keynes 1940); XXII, 105, 124–32, 204, 219–20, 289–94, 307–08 with 322–3, 353–4).

To sum up the logic of inter-sectoral balances, the core structure of Keynes's demand-side approach to determining activity levels rests upon the notion of aggregate planned expenditure being decomposable into an 'autonomous' element and an 'induced' element, the latter being a function of current incomes. The induced expenditures generate the multiplier or multipliers linking autonomous expenditures to the magnitude of total aggregate expenditure, and hence to aggregate output and incomes when production adapts to demand. The above Keynes logic of the multiplier and inter-sectoral balances can then be illustrated in the simplest two-sector framework, with the propensity to consume (b) and the taxation rate (t) constant with respect to current incomes – so that private consumption (C) is entirely induced demand – and private investment (I) and public expenditure (G) also exogenous with respect to current incomes. (The latter are serving here as the autonomous demands.) The equilibrium of aggregate income (Y) and expenditure is given by:

$$\begin{aligned} Y &= C + I + G \\ Y &= b(1-t)Y + I + G \\ Y &= \{1/[1 - b(1-t)]\}(I + G) \end{aligned}$$

A one dollar increase in G increases equilibrium private saving by $(1-b)(1-t)/[1-b(1-t)]$ and increases tax revenue by $t/[1-b(1-t)]$, so that the two add up to equality with the one dollar increase in G . The increase in the public sector deficit is just matched by the increase in private saving, *appearing* to enable the increased deficit to be financed by issuing additional public debt equal to the increased private saving.⁸

4. DEBT FINANCING AND THE LEVEL OF INTEREST RATES

There are two difficulties that can be raised with respect to this multiplier resolution of the coordination of saving and investment, difficulties which might stand in the way of dismissing a role for interest rates: a) the character of the disequilibrium path to re-equilibration when investment, private or public, increases; b) the question of provision of a means of payment (or medium of exchange) to enable increased investment spending – finance which must be made available prior to, or at least simultaneous with, the investment spending. The former issue seems to cause no problem: as Meade (1993) formalized the saving dimension of the multiplier process in 1930–31 – in a manner allowing for time lags between investment demand and output, and the consequent induced consumption demand and associated desired saving – there will be an excess of actual saving over planned saving during the temporal process, with that discrepancy diminishing and approaching zero as the process approaches completion (*cf. GT: 122–5; Chick 1997: 166–9, 176–9*). The financing issue is more significant; but here there is an asymmetry between private and public investment. We may leave aside the question of possible difficulties a means-of-payment constraint might pose for the autonomy of private investment. Perhaps a strict autonomy requires an ‘elastic’ banking or wider financial system, in the sense of a system able to accommodate liquidity demands without pressure on interest rates, whether or not underpinned by central bank policy accommodative of the private sector’s desired liquidity.⁹ But with respect to public investment (or public recurrent expenditure for that matter), the State of course can issue means of payment itself, most notably, fiat currency.

Keynes is well aware of this difference. In a string of 1939 commentaries he makes the point in relation to debt-financed public expenditure, that government can (and should) issue the debt *after* it has done the spending. In an article in *The Times*:

Loans must be raised after the expenditure has been incurred and not before. The savings come into existence *pari passu* with the expenditure, and owing to various time lags and transferences are not likely to be available for subscription to a loan until some time later. If an attempt is made to borrow them before they exist ... a stringency in the money market must result, since, pending the expenditure, the liquid resources acquired by the Treasury, must be at the expense of the normal liquid resources of the banks and the public. (*CW: XXI, 516–17*)¹⁰

The prior funding mechanism Keynes has in mind here is partly monetary financing, as is clarified in a letter to *The Times* two weeks later:

To begin with, the Treasury will finance itself by Treasury bills taken up to the extent of about 10 per cent by the Bank of England, and for the rest mainly by the joint stock banks.¹¹ ... Meanwhile the deposits of the public with the banks will be correspondingly increased [from the multiplier process]. These deposits will be accumulated out of unspent income – that is to say, they represent savings and would normally be available to purchase Government stocks or other investments. (*CW: XXI, 524*)

Keynes goes on to argue that eventually such liquid savings will be redirected towards long-term securities, placing downward pressure on yields; ‘Treasury should postpone the issue of new loans, other than Treasury bills, until this process is well advanced’ (*CW: XXI, 525*). It is worth noting that the context here is a crisis situation, with war only months away.

The same argument is presented in the previously mentioned 28/5/39 memorandum:

[W]ith modern representative money [see *TM*: I, 6–9] and a modern banking system, we know that the necessary ‘finance’ can be created by a series of ‘book’ or ‘paper’ transactions. The Treasury can ‘pay’ in effect by ‘book’ entries and the book entries can be transformed into a regular loan at a much later date. (*CW*: XXI, 540)

Keynes allows that if ‘these “book” entries ... such as Treasury bills’ (*cf. GT*: 167n) take ‘an unlimited scale’ then this liquidity might prove ‘dangerous’, in enabling a later ‘uncontrolled expansion of private enterprise’. But he remains confident of a manageable process:

if the Treasury is moderately patient, the weight of natural market forces will by themselves render a funding policy possible at a reasonable cost. It is simply a question of waiting and of making it clear that loans will only be available at a modest rate of interest (*CW*: XXI, 540)

The argument is elaborated further, Keynes also making explicit the contrast on this issue between public and private debt financing (*CW*: XXI, 542–5).¹²

What Keynes evidently has in mind with this kind of process is that the initial financing, largely via issuing Treasury bills, will be partly monetary financing, to the extent that the bills are taken up by public sector agencies. This will involve injection of additional outside money into the private sector – although when the take-up of the securities is by public sector agencies other than the central bank, it is, in effect, a substitution from ‘idle balances’, so to speak, held by one part of the public sector, to active balances expended by another part. During the 1930s public sector agencies other than the central bank were regularly purchasing parts of government securities issues, and then subsequently, often selling the stock, gradually, to the private sector (Howson 1975: 160–66; also Sayers 1956: chs V, VII, more widely on the public financing methods employed through the 1930s and subsequent war years). But the private financial sector is also understood to be partly, perhaps substantially, absorbing the initial Treasury bill issue (*cf. Keynes* 1923: 141–6, on the role of Treasury bills in banks’ liquidity management). Probably Keynes is tacitly supposing that the private financial sector has a capacity to absorb the stock, up to some level, without adverse pressure being placed on the prices and yields of the stock, although the possibility of pressure on yields in the absence of accommodative monetary policy is explicitly acknowledged elsewhere (see, e.g., note 10 above), certainly in relation to longer-dated securities.

Keynes’s notion of ‘waiting’ before securing the longer-term debt finance for public spending is motivated by a concern about the term structure, a concern to avoid placing upward pressure on long rates. There is a very extensive set of extant commentaries evidencing Keynes’s sensibility regarding managing the psychology of the market, with a view to keeping debt servicing costs as low as possible – an approach that is the antithesis of mere mechanical application of a theory. We may present a range of these commentaries, to convey a sense of this sensibility and the issues involved, under four heads.

False Consciousness

In an echo of the problem of false consciousness that Keynes later raised with respect to functional finance, he comments: “‘Sound’ finance may be right psychologically, but economically it is a depressing influence’ (*CW*: XXI, 107, 1932). And similarly:

There are enormous psychological advantages in the *appearance* of economy. It prepares the way for the conversion of the Debt and it tends to lower the long-term rate of interest. ... But that does not prevent economy from being deflationary and probably injurious to business profits. (*CW*: XXI, 110; also 126, both 1932)

The Means to Prosperity repeats this notion that the ‘financial confidence’ from ‘budget policy approved by public opinion’, for ‘psychological reasons’ enables ‘the transition to a lower long-term rate of interest’; but this only justifies ‘temporary reduction of loan-expenditure’, since ‘the whole object of the policy is to promote loan-expenditure’ (CW IX: 353–4). Discussing public works in *GT* (120), Keynes notes: ‘With the confused psychology which often prevails, the Government programme may, through its effect on “confidence”, increase liquidity-preference or diminish the marginal efficiency of capital’. Nearing the end of the war, Keynes sees an element of a false consciousness in interest rate expectations: an ‘expectation of higher rate ... after the war ... based on the false belief that it will be necessary to stimulate and encourage saving and that cheap money during the war has been the result of controls’ (CW: XXVII, 391, March 1945).

Psychology of the Market

The capacity of policy to manage rates presupposes an element of indeterminacy in the level of rates, which in the *GT* context is attributable to a degree of malleability of the psychology underpinning liquidity preference and conventional interest rate beliefs. This is evident in incipient form earlier: ‘there is a large conventional or psychological element in the market rate of interest which needs firm and skilful management’ (CW: XXI, 116–17; also 123, both 1932). In 1934, advocating the feasibility of a low (and lower) long rate, Keynes nevertheless acknowledges, but rejects, ‘a grave doubt in the mind of the market as to whether the existing price of long-term securities will be maintained’ – based on ‘the evidence of past experience’ of economic recovery, ‘the expectation that Consols will fall when trade recovers’ (CW: XXI, 313–14). Discussing whether new debt-financed defence expenditure need place upward pressure on interest rates, Keynes emphasizes the importance of ‘the psychological atmosphere towards gilt-edged and other securities’. It is ‘not a shortage of savings which will impair the position of gilt-edged securities, but a change in psychological expectations as to their future prospects’. Hence the importance of policy ‘maintaining stability in the gilt-edged market’; recent ‘weakness’ in the market is partly due to ‘anxiety about the Budget’ and public debate ‘about future policy’ (CW: XXI, 399; also 392, both 1937).

In February 1936, the month *GT* was published, Keynes bemoans that Treasury conducts itself in a manner which can only encourage a lack of market confidence in low rates: ‘Short-term money today is extremely cheap. But it is confidence in the future of short-term rates which is required to bring down long-term rates’ (CW: XXI, 375). After noting that Treasury has most recently issued five-year debt at 1.5 per cent and twenty-five-year debt at 2.75 per cent, partly to retire short-term debt costing 0.5 per cent, Keynes comments:

There can be no rational explanation of the longer-dated issue except that they themselves have no confidence in the short-term rate of interest remaining low. Since they largely control the situation, it is natural that humbler folk should be influenced by what the Treasury seem to expect. (CW: XXI, 376).

Similarly in 1939, Keynes writes that policy must promote ‘a sense of confidence in what the future borrowing policy of the Treasury is going to be’ (CW: XXI, 559) – and of the importance of

the impression which the Treasury itself creates concerning its objective and future policy. If the Treasury gives an impression of defeatism or of asking the market to accept risks it is not prepared to accept itself, the preference for remaining liquid will, of course, be greatly stimulated. If the Treasury appears to be in a hurry, if it offers loans below the market, and if its own behaviour indicates an expectation that the market will get worse in course of time rather than better, confidence will be quickly destroyed. (CW: XXI, 564)

Policy Gradualism

The need to manage – one could say, ‘massage’ – market sentiment and expectations also points to the possible need for caution and gradualism: ‘it assuredly lies in their power’ for the US Treasury and Federal Reserve to reduce long rates, by way of ‘a gradual but obstinate attack on high interest rates’ (CW: XXI, 327–8; also 317, both 1934; XXII, 159–60, 1940). Similarly with regard to Treasury and the Bank of England in Britain, ‘it lies within their power, by the exercise of the moderation, the gradualness, and the discreet handling of the market of which they have shown themselves to be masters, to make the long-term rate of interest what they choose *within reason*’ (CW: XXI, 395; emphasis added, 1937).¹³

In early 1935 Keynes sees obstacles in the way of further long rate reductions, the key problem being ‘the attitude of British institutional investors to the future of the rate of interest. The current long-term rate of interest is a highly psychological phenomenon which must necessarily depend on what expectations we hold concerning the future rate of interest’. In a degree of deference to the prevailing market psychology, Keynes recommends the monetary authorities ‘consolidate the [interest rate] position which has been won, rather than ... aim at an immediate further advance’; adjustment of other rates that are lagging behind the decline in government yields is more important (CW: XXI, 350–51). Keynes sums up his position at this point in time:

I feel not less strongly than before [CW: XXI, 312–17] the importance of a declining long-term rate of interest, but a greater degree of confidence than now exists in the maintenance of the rates of interest we already have at a level not above their present figure is our most pressing need. (CW: XXI, 351)

Treasury can contribute to that confidence by *itself* showing ‘confidence in the expectation of a declining rate of interest in the future’, rather than thinking in terms of ‘trapping the investor, so to speak, into lending to them for an indefinite period on terms which he will subsequently regret’ (CW: XXI, 351; cf. 25n, 106, 1931–32).

Spectrum of Maturities

To underpin the success of a cheap money policy, Keynes wants the authorities to accommodate the market’s preferences with respect to maturities. This is with a view to ending the British practice of tending to offer the market too stark a choice between only either very short or very long (notably, perpetual) securities, which naturally tends to heighten long rates.

For the future of the gilt-edged-market it is ... important that long-dated securities should not be in oversupply relative to the demand The optimum arrangement from the point of view of the Treasury is to supply the different types of bonds in the proportions in which the public want them. (CW: XXI, 112, 1932)

If a particular type of security, such as Government stocks having no fixed date of redemption, are in oversupply relatively to stocks with a definite maturity either of early or intermediate date, as measured by the relative strength of the demand for the two types, the former will tend to be a weak market, which will react unfavourably on long-term rates of interest generally. ... [I]t must always be to the interest of the Treasury to supply the heterogeneous requirements of the market with securities of different types and maturities in the optimum proportions so as to minimise the aggregate cost of the national debt. (CW: XXI, 115–16, 1932; also 351–2, 1935)

Keynes is still prosecuting the argument in 1937. The failure of the British authorities to offer a range of maturities is compared unfavourably with American practice; in Britain ‘the greater part of the debt ... has no fixed date of repayment within the next 25 years’, whereas the US has ‘notes or bonds falling

due for repayment in almost every year', so that 'every taste is suited'. This 'allows the American Treasury to borrow at a materially lower average rate'. British Treasury 'should profit from the anxieties of the public and save interest by supplying them with the potential liquidity which they demand' (CW: XXI, 402–03; also 517, 541, 544–5, 559, all from 1939) – where 'liquidity' here includes shorter-dated debt (see section 5). The same view is pressed throughout the war (CW: XXII, 158, 410–20, documents from 1940–44), although by then the British authorities were issuing a wide range of maturities.

5. MANAGING THE TERM STRUCTURE

What, then, is Keynes's mature theory of the term structure, enabling his conviction that policy can manage and shape it? All of the above documented Keynes commentaries concerning the role of expectations of future interest rates in determining current interest rates – and hence the desirability of policy managing expectations – are consistent with the *TM* point of departure for explaining the term structure, that current long rates are regulated by future short rates (section 2 above). For most of *GT* Keynes theorizes in terms of 'the' rate of interest, although making explicit that this is serving as a proxy for 'the complex of the various rates of interest current for different periods of time, *i.e.* for debts of different maturities' (*GT*: 167n). Nevertheless he does address the determination of the term structure, in the framework of his liquidity-preference theory of interest.

Keynes makes 'the existence of *uncertainty* as to the future of the rate of interest, *i.e.* as to the complex of rates of interest for varying maturities which will rule at future dates', the 'necessary condition' for liquidity preference. In doing so he essentially repeats the logic of the *TM* point of departure on the term structure: if future short rates are known with certainty, then current long rates can be straightforwardly inferred from the zero-profitable-arbitrage condition.¹⁴ With future rates uncertain 'if a need for liquid cash may conceivably arise before the expiry of *n* years, there is a risk of a loss being incurred in purchasing a long-term debt and subsequently turning it into cash, as compared with holding cash' (*GT*: 168–9).¹⁵ Hence also the following assertion of future rates anticipated and at least partially factored into current rates: 'the expectations, which are held concerning the complex of rates of interest for various terms which will rule in the future, will be partially reflected in the complex of rates of interest that rule to-day' (*GT*: 143; also 145n).¹⁶ Exposure to variability of bond prices gives a role to expectations of future *long* rates, as well as expectations of future short rates.

It follows from this understanding of the term structure that to succeed, a policy of persistent or permanent low(er) long rates must shift average market opinion as to the level of the normal (or 'safe') rate of interest: 'the long-term market-rate of interest will depend, not only on the current policy of the monetary authority, but also on market expectations concerning its future policy'. The short rate is 'easily controlled'; but the long rate 'may be more recalcitrant when once it has fallen to a level which, on the basis of past experience and present expectations of *future* monetary policy, is considered "unsafe" by representative opinion'. Hence the very same policy may fail if perceived as 'experimental' or 'easily liable to change', but 'easily succeed' if seen as 'reasonable ... practicable ... in the public interest, rooted in strong conviction, and promoted by an authority unlikely to be superseded'. Keynes goes on to discuss the interest rate as a 'highly conventional' phenomenon, concluding with cautious optimism that a monetary policy 'of persistence and consistency of purpose' will be able to shift the conventional perception as to the safe or normal rate of interest towards lower rates (*GT*: 201–04). He also endorses a policy of open market operations across the whole range of maturities – in the spirit of the 'tap' system (more on this below), and something he'd been more or less advocating since *TM*, with a view to enhancing the influence of monetary policy across the yield curve as a whole (*GT*: 205–06). This approach to the term structure is also evident in policy commentaries by Keynes over subsequent years (CW: XIV, 153; XXII, 63–4, 84; XXIX, 266; 1937 to 1939).

The term structure is again systematically addressed by Keynes as a consequence of his membership of a 1945 government in-house committee to consider post-war debt management, the ‘National Debt Enquiry’. His handwritten notes for the Enquiry restate the liquidity preference doctrine, that interest is the compensation for ‘depart[ing] from liquidity’. For short versus long rates it then becomes a question of ‘[w]hat determines the reward the individual requires to surrender his liquidity *for a long or short period*’ (emphasis added) – implying that holding a longer-dated security is more illiquid a position. But why, if both securities are equally tradeable from day to day? It is individuals’ ‘expectation ... or ... uncertainty about the future *changes* in *r. of i.*’; if they ‘just don’t know’ and seek to protect themselves ‘from possible loss in the event of ... desiring liquidity, then the shorter are preferable and you need to earn a risk premium to lock yourself up longer’. In other words, the greater risk exposure at longer maturities is due to greater price variability at the longer end, for any given percentage variation in yields, across the board (*cf. GT: 203*). Keynes goes on to argue that so long as the authorities have no ‘counter-liquidity preference’ – i.e., they are ‘indifferent about [short versus long] funding’ – then ‘they can make both the short and long-term [rates] *whatever they like*’ (emphasis added), although this is qualified by considerations of ‘whatever they feel to be right’ for ‘employment and other social reasons [e.g., “how much reward to saving is socially desirable”]’ (*CW: XXVII, 390–92; also XXI, 544, 558, 563, all 1939*).

With a view to this rate-setting objective he endorses the ‘tap’ issuing system, whereby the authorities set the rates at which they will supply securities, across the range of maturities, and allow the private sector to choose the quantities of the various maturities that they wish, over time, to take up – and defends a 3 per cent bond issue, partly on the basis that ‘the euthanasia of the rentier should not take place just yet’. But it’s also clear here that Keynes is happy to see securities *not* taken up, so that funding can occur via the private sector’s holding idle money balances. The policy cautiousness of which Meade speaks (in our epigraph quotation) is evident here: ‘The essence of our interest policy should be to give a sufficient immediate reward to saving, so not to run prematurely against public psychology’ (this is the month following Meade’s comment). Keynes’s subsequent 18/4/45 written summary of his views, for the benefit of the Enquiry Committee, again endorses the tap system – whereby ‘the preferences of the public ... determine the distribution of the debt between different terms’ – but makes explicit that the rates set should be constrained by a variety of considerations, including responding to changing private sector preferences between maturities by altering the rates set. And there is that caution again: ‘continuity of policy and gradualness of changes should be ensured unless in exceptional circumstances and for grave cause’ (*CW: XXVII, 392–8; also 400*).

Hence Keynes’s above-quoted comment that the authorities can make short and long rates ‘whatever they like’, in fact, is subject to rather substantial qualification. In the tap system the authorities set the rates they offer the market across new issues of maturities (in effect, exogenously fixing the term structure), and allow the market to determine the quantities taken up – with monetary financing making up any shortfall between the quantities of securities issued and the private sector take-up. Putting aside the self-imposed constraints that Keynes mentions (e.g., the above-mentioned ‘social reasons’), if the policy-maker can set *any* rates and spreads, then, for example, why not offer 2 per cent and 1 per cent on short and long securities respectively? There are limits to the authorities’ capacity to set term spreads which, to take the most obvious consequence, make a negative term spread non-credible as a persistent or permanent policy. Hence the levels and spreads Keynes proposes could not have been other than with a view to constraints derived from the psychology of the market – even if with influence on those constraints from policy (along the lines of *GT: 201–04*) – that psychology, in turn, being determined by objective phenomena (e.g. relative liquidity, differential risk, objective factors shaping future short rates) and subjective factors (e.g., false consciousness, attitudes towards risk). All the rate structures proposed by Keynes in the 1930s and 1940s entail a positive-sloped yield curve. There is no warrant for the claim of Fantacci *et al.* (2014: 1105), responding to Brillant (2014), that ‘Keynes does not appear anywhere to assume that the long-term rate of interest is *systematically* greater than the short-term rate of interest’ (original emphasis).¹⁷

The notion of private lenders' liquidity preference requiring a risk premium in longer interest rates implies that a policy of shifting the composition of debt towards a longer average maturity – e.g., rolling ten-year debt over into twenty-year debt – will tend to steepen the yield curve, in order to induce the private sector to hold a larger proportion of longer-dated public debt. This possibility is consistent with Keynes's opposition to government 'counter-liquidity preference': if the demand side of the debt market *ceteris paribus* prefers shorter securities (liquidity preference) a preference by the supply side of the market *ceteris paribus* to issue longer securities (counter-liquidity preference), must tend to make the yield curve steeper than it otherwise would be. Keynes wants the authorities to be more or less indifferent to maturity composition, and just aim to minimize the average cost of debt servicing.¹⁸ His stance is captured in the following 1943 comments:

Should we not clear our minds of the idea that a more distant date of redemption is always better than a nearer date? As long as twenty- or thirty-year maturities carry a higher rate than, say, ten-year maturities ... one can safely conclude that the general expectation is in favour of future rates of interest being higher than at present.¹⁹ We shall not have fully mastered the position until the opposite expectation prevails As soon as the expectation prevails that the future rate of interest is more likely to be 2½ per cent than 3 per cent, then the public will seek to assure themselves of 3 per cent for as long a term of years as possible. (CW: XXII, 418)

If, at some point in time, Keynes's preferred 'euthanasia' policy were to be implemented – a zero real riskless rate of interest as a permanent policy – then to the extent that this was associated with a permanently constant nominal short rate, term spreads should go to zero. (The same logic applies to setting a very low, rather than strictly zero, real rate, or indeed, any constant level.) The zero-profitable-arbitrage condition would equalize longer rates with that constant short rate. At least this would be the case, so long as the policy was credible to the markets into the more or less distant future; and putting aside: (a) variability of the inflation rate or of risk premia, which, by leading to variability of nominal rates, could provide further grounds for positive term spreads; (b) any differential risk due to causes other than interest rate variability (e.g., default risk); and (c) random disturbances to nominal rates that could also provide still some slight reason for a positive-sloped yield curve. *This would be the ultimate conquest of the term structure.* Of course, such a permanent policy would entail rejecting use of the interest rate as a short-run countercyclical or anti-inflation policy instrument, as Keynes indeed suggested in *GT* (e.g., 320–29) and argued in the 1940s, against the views of Meade and others.²⁰ His opposition to discretionary monetary policy in this sense is precisely due to the consequent unsettling of interest rate expectations undermining the maintenance of low long rates:

... if we allow the rate of interest to be affected [i.e., increased, in the context of economic recovery], we cannot easily reverse the trend. A low enough long-term rate of interest cannot be achieved if we allow it to be believed that better terms will be obtainable from time to time by those who keep their resources liquid. The long-term rate of interest must be kept *continuously* as near as possible to what we believe to be the long-term optimum. It is not suitable to be used as a short-period weapon. (CW: XXI, 389; also XIV: 162, both from 1937; XXVII, 377, 1944)

6. CONCLUSION

Keynes's understanding of the possible influence on interest rates of public debt levels and the maturity composition of debt, as it is expressed in his 1930s and 1940s writings, is a fine balance between optimism and caution, a balance that turns upon the role of interest rate expectations in shaping long rates. The optimism is expressed in the conviction that if the authorities conduct measured policy, consistently pursued, conveying to the markets that they know what they're doing and are confident with regard to their purposes and conduct, then they can shape interest rate expectations to their objectives. The caution is due precisely to the possibility that the authorities

could fail in that endeavour, whether due to their own conduct²¹ or other factors. If public debt trajectories place upward pressure on interest rate expectations, management of debt servicing costs could be compromised as well as other possible policy objectives (e.g., income distribution, activity levels). In the simultaneous pursuit of debt management and cheap money, what is to be avoided is anything which might engender market expectations that rates are unsustainably low. On the other hand, it would be antithetical to Keynes's policy sensibility to make possible adverse impacts of debt trajectories on the psychology of the market a justification for axiomatic debt conservatism – a kind of a priori aversion to substantial debt financing because of a supposed ever-present threat of upward pressure on interest rates (e.g., Rogoff 2013).

In terms of the larger theoretical context, Keynes's fundamental vision of the demand-side determination of activity levels was and remains sound; although private consumption is now much more capable of playing a role in autonomous demand than Keynes allowed in 1936, along with investment. Profit expectations drive private investment which, in turn, is enabled, not by prior saving, but by a more or less accommodative financial system – putting aside here the complication of divergences between the profit expectations of investors and of funding entities. (McLeay *et al.* (2014) provides a valuable account of the character of accommodative debt financing under contemporary rate-setting monetary policy.) In any case, whatever the extent to which private investment is finance-constrained, in a world of inconvertible fiat currencies, the possibility of any such constraint confronting autonomous, discretionary public investment is dramatically less. In the first instance, such a constraint would exist only to the extent that the suppliers of goods and services that government wishes to purchase are resistant to accepting payment in outside money or 'cash' – highly unlikely, to put the point mildly.

But the willingness of suppliers of goods and services to government to accept payment in cash is one thing; their willingness to then *hold* that money, as a desired asset, is another. If there results excess money balances for the private sector as a whole, then it is possible that the excess can be drained from the private sector via its purchasing government securities of various maturities. One may note in this context that Keynes's idea of issuing debt *after* the government spending that the debt is to finance is certainly unproblematic, today, for the validity of Keynes's fundamental logic concerning the role and process of public spending in a demand-side approach to activity levels. Under contemporary conditions, government expenditure via monetary financing – with bond issuance and rate-setting monetary policy (together with taxation) draining excess liquidity, is a well understood and workable process – at least for deficit and debt trajectories within the bounds of normal experience. But if, at prevailing yields on government securities, the private sector as a whole is unwilling to substitute government securities for the entirety of any such excess money balances (net of taxation), then that money will find its way into other channels (expenditure on other assets or on goods and services) until it ceases to be an excess – unless government yields become more attractive (Aspromourgos *et al.* 2010: 442–6; Aspromourgos 2014a: 582–5). Hence the question of interest rates can come into play and, with rate-setting monetary policy anchoring a short rate, the term structure. One may recall two quotations from Keynes provided earlier. Explaining the logic whereby a public sector deficit is balanced by a private sector surplus, he adds: 'The only question which arises is as to *the ultimate form* in which they [the increased savings] are held' (**p. 6 above**; emphasis added); and discussing bank deposits of unspent income generated by the multiplier process, Keynes comments 'they represent savings and would normally be available to purchase Government stocks *or other investments*' (**p. 7 above**; emphasis added).

Keynes regularly concedes in his public debt commentaries that full employment imposes a potential constraint upon a low interest rates policy. Such concessions are a consequence of his acceptance of a well-defined, inverse functional relation between aggregate investment expenditure and the level of interest rates – a relation sufficiently robust as to generate a unique and well-defined full-employment rate of interest. This residual element of orthodoxy in Keynes's thinking should be dispensed with. But even dismissing such a functional relation, since interest rates can act upon inflation via other channels (Aspromourgos 2007: 525, n. 9), there nevertheless may be an imperative

to employ interest rate policy as an anti-inflation instrument, in the absence of any plausible alternatives.²² It is of interest that in the period from the mid-1940s to the early 1950s, it was supposed imperatives of anti-inflation policy (together with balance of payments problems) that were used as the justification for abandonment of cheap money policy in Britain (Howson 1993; pages 327–39 provide a summary account). Furthermore, however *low* a level of interest rates is desired – that is a distinct issue – it is questionable whether a policy of a *constant* nominal rate, or constant real rate, is feasible, without a plausible instrument for anti-inflation policy other than interest rates.

When Lerner claimed that Keynes was timid, even inconsistent, in not wholeheartedly endorsing functional finance, it was with a view to what Lerner took to be the logic of *GT* – his conviction that functional finance was the natural policy corollary of the theory of that book (Aspromourgos 2014b: 424). Keynes’s qualifying his endorsement of functional finance is entirely consistent with *GT*. But his view that Lerner was not facing ‘the real difficulties’, ‘all the practical problems’, is more an expression of Keynes’s deep policy engagement with debt management and interest rate issues throughout the 1930s and 1940s, and this, for a nation with high public debt liabilities relative to national income (Aspromourgos 2014b: 418, 420, 425–9). Keynes is right to regard the simultaneous pursuit of debt management and cheap money as a policy problem not capable of reduction to a straightforward application of simple theorems.²³ Thereby a theory/practice distinction becomes an important element in understanding Keynes’s policy sensibility with respect to this issue. Opening chapter 12 of *GT*, on ‘long-term expectation’, Keynes emphasizes the importance of ‘confidence’, which ‘economists have not analysed ... carefully’, adding a comment that points to that distinction and the associated limits of theory (although the specific focus here is on expected profitability of capital):

There is, however, not much to be said about the state of confidence *a priori*. Our conclusions must mainly depend upon the actual observation of markets and business psychology. This is the reason why the ensuing digression [i.e., chapter 12] is on a different level of abstraction from most of this book. (*GT*: 148–9)

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NOTES

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1. The pamphlet, *Can Lloyd George Do It?* (1929), written by Keynes with H.D. Henderson, although accepting in principle that public investment can place upward pressure on interest rates (CW IX: 122), argues that loan-financed public investment will not do so under the prevailing slump conditions, due to the consequent presence of excess savings; but monetary policy must not *react* to the investment programme with higher interest rates (CW IX: 118–19). Keynes abandons the *TM* conceptualization of saving/investment imbalances in the 1930s.

2. For saving/investment balance and the price level, see *TM*: I, 123–84; market rates relative to the natural rate, *TM*: I, 201, 205–10, 217–20, 260, 273, 331–40, 345; II, 362–3; and Wicksell, *TM*: I, 154–5, 196–9.
3. There is much appeal to ‘stickiness’ in *TM* (e.g., I, 165–6, 206–10; II, 184, 203, 205, 351, 385); cf. *GT*, chapter 19.
4. One could say, *haunting* the new theory, insofar as the existence of a full-employment interest rate implies that unemployment is attributable merely to inflexibilities that obstruct the actual rate from falling to this level. The considerable criticism of the efficacy of monetary policy in *GT* (163–4, 202–08, 315–21) may also be recalled here.
5. In the same place, Keynes supposes that tax-financed increases in public expenditure will have no net aggregate impact (*CW* IX: 349; similarly, XXI: 326, from 1934); that is to say, in latter-day language, the balanced-budget multiplier is assumed to be zero, implying that the multiplied impact of taxation and of spending are similar. Later, in 1940–41 documents, it is allowed that higher taxes will be partly paid for via lower saving, implying a positive balanced budget multiplier (*CW*: IX, 415; XXII, 205, 222, 272).
6. But on 2/2/37, writing about debt-financed rearmament expenditure, Keynes makes the point: ‘With increased activity incomes rise and increased savings become available corresponding to the expenditure paid for out of borrowed funds’ (*CW*: XXI, 398).
7. It may be noted incidentally that elsewhere Keynes makes comments tacitly dismissive of Ricardian equivalence (*CW*: XXII, 45–6, 14/11/39).
8. Essentially the same logic applies to a one dollar increase in I . But in that case the difference between the increase in private saving and the increase in I is matched by a *reduction* in the public sector deficit (increase in tax revenue), which reduces by that magnitude the amount of private saving required to offset the public deficit. Hence the change in private saving net of the change in the public deficit is equal to the change in I .
9. *CW*: XIV, 80, 91–2, 207–11 (from Keynes 1937a), 215–23 (Keynes 1937b), 229–33; XXIX, 222, 227–9, all from 1936–37. For useful discussion of the issue see Richardson (1986), Bibow (2009: 27–43; a revised version of Bibow 1995) and Chick (1997: 169–79).
10. Discussing ‘increasing public works’ in *GT* (119), Keynes allows that the ‘method of financing’ and associated increased demand for ‘working cash’ might increase the interest rate ‘unless the monetary authority takes steps to the contrary’.
11. What follows here is a statement by Keynes to the effect that there will be an elastic demand for bills, for the *contingent* reason of there being, at that time, excess private sector liquidity due to the operation of the managed floating exchange rate system (cf. Sayers 1956: 219).
12. The parallel argument in the July *Times* article is at 557–63. On not borrowing before spending, see also 449, 453, 490, from 1938. In December 1933, in relation to the US, Keynes speaks of ‘expenditure of borrowed or printed money’ (292; emphasis added).
13. The content of the ‘within reason’ constraint is not made explicit. In 1939 Keynes again speaks of Treasury having ‘the power within certain limits’ to determine ‘reasonable’ borrowing rates; but here also the limits are not made explicit, and ‘reasonable’ is defined only as the general level of rates consistent with full employment (*CW*: XXI, 558). Elsewhere he implies that the yield curve is normally positive-sloped (*CW*: XXI, 403, 517). For the content of the constraints or limits, see section 5.
14. This equal profitability condition enables causation in only one direction: a sequence of given future short yields to maturity determines a unique long yield to maturity (the geometric average of the short yields), whereas a known current long rate is consistent with an infinite number of short-rate sequences.
15. *GT*: 203 makes explicit that this risk exposure increases at longer maturities. Keynes’s comment that, for the purposes of the liquidity-preference theory of interest ‘we can draw the line between “money” and “debts” at whatever point is most convenient for handling a particular problem’ also implies that liquidity preference can be applied to the structure of yields as well as their general level (*GT*: 167n).
16. There is passing suggestion of a role for inflation expectations in yields at *TM*: II, 394; *CW*: XXI, 447 (1938). Elsewhere, considering the responsiveness of money wages to increasing prices, Keynes comments: ‘Everyone, including the trade unions, has become index-number conscious’ (*CW*: XXII, 120–21, 1940).

17. For a fuller and particularly thoughtful interpretation of Keynes's approach to the term structure, and its relation to John Hicks's and later theories, see Leijonhufvud (1968: 149–57, 282–314).
18. At *CW*: XXVII, 400, 403 Keynes indicates that in thinking about interest rate levels and aggregate debt servicing costs he is also taking into account tax rates on interest income and on capital gains.
19. Keynes seems here to ignore underlying differential risk or illiquidity.
20. This is well documented in Meade's diary (Howson and Moggridge 1990: 48–9, 55–6, 59, 61, 65, 70, 73, 81). See also Howson (1993: 18–29, 43–62, 88–90, 121–31, 149–52, 176–9, 305–30); and for the introduction and conduct of cheap money policy in the 1930s, and its relation to debt management considerations, Howson (1975). It may be noted that bank-rate was held constant at 2 per cent from 30 June 1932 to 7 November 1951, apart from a nine-week period in August–October 1939, these being the weeks around the declaration of war (Howson 1988: 227, 249, 251). As early as June 1931 Keynes observes that 'in the long run the banking system can affect the long-term rate by obstinately adhering to the correct policy in regard to the short-term rate' (*CW*: XIII, 365–6). At one point in the National Debt Enquiry deliberations Keynes makes a slight concession to the use of short rates as a short-run policy instrument (*CW*: XXVII: 397–8).
21. For example, the authorities' acting to lengthen average maturity – say, in the context of initially low long rates – may itself cause the yield curve to steepen, by persuading the market that the authorities believe (and believe correctly) that long rates are currently abnormally (or otherwise only temporarily) low.
22. This is so whether inflation is due to excess demand or other causes, notably, incompatible distributional claims (sometimes characterized as 'cost-push'). On Keynes and the issue of a policy instrument for targeting inflation, see Aspromourgos (2012: 156; 2011: 642–7). It is clear from his war finance writings that if debt-financed government expenditure were pushing the economy up against a full-employment constraint, and thereby generating excess-demand inflation, Keynes would favour switching from debt financing to taxation – rather than having recourse to higher interest rates.
23. It may be emphasized that keeping term spreads within satisfactory bounds under a full-blooded functional finance policy would involve contemplating the outcomes under conditions in which the debt trajectory is treated as a mere policy-irrelevant side effect of the pursuit of other objectives; e.g., the results of a thoroughgoing full employment policy funded entirely by some combination of outside money and securities issuance. Jayadev and Mason (2015: 103–11) provide a valuable Keynesian interpretation of actual US term spreads since the 1950s.