

KEYNES ON INFLATION

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Not the least of inflation's consequences is the damage done to the reputations of certain prominent economists. A case in point is John Maynard Keynes (1883-1946). Once highly regarded for his brilliant pathbreaking analysis of the causes of mass unemployment in the Great Depression of the 1930s, he is now given low marks for his views on inflation. Popular folklore has it that he was largely unconcerned with inflation from the start, that his subsequent preoccupation with unemployment led him to ignore it altogether, and that, as a result, he favored expansionary measures to eliminate unemployment regardless of their inflationary consequences. Since his death in 1946 his name (or at least the label "Keynesian") has been linked to such inflationist slogans as "full employment at any cost" and "money doesn't matter." It has also found an association with the discredited concept of a stable enduring trade-off between inflation and unemployment as well as with the equally discredited notion that the authorities can peg interest rates and real economic activity at any desired level simply by manipulating the policy instruments they command. On the policy front his name is now popularly identified with excessive government spending, mounting budget deficits, inflationary money growth, and, in Britain at least, with the idea that inflation can be contained with incomes policies and wage-price controls. In the textbooks, his views are caricatured in the stylized "Keynes versus the monetarists" manner as the opposite of the anti-inflationary views of the monetarists. Small wonder that he has been widely perceived as an inflationist and that our present inflation is often described as the legacy of Keynes.¹

The purpose of this article, however, is to show that the foregoing perceptions are wrong: that far from being an inflationist, Keynes deplored inflation, warned repeatedly of its evils, and recommended

restrictive demand management policies to prevent it; that far from being an extreme nonmonetarist, he shared the monetarists' antipathy to inflation, endorsed their policy goal of price stability, and employed at least five monetarist concepts in his analysis of inflation; and, finally, that far from advocating full employment at any cost, he maintained that even at high unemployment rates expansionary aggregate demand policy must be curbed to prevent inflation. More precisely, this article demonstrates (1) that Keynes was always concerned with inflation, (2) that this concern motivated his advocacy of anti-inflationary aggregate demand management policy on at least two occasions (including once in the Great Depression of the 1930s), and (3) that there are enough monetarist elements in his analysis to qualify him as at least a partial monetarist as far as inflation theory is concerned.

These points are documented in the following paragraphs, which summarize Keynes' own views on inflation. As pertinent now as they were when he first presented them, his views are contained chiefly in the following works: (1) *Indian Currency and Finance* (1913), (2) *The Economic Consequences of the Peace* (1919), (3) policy advice given to the Chancellor of the Exchequer in February 1920, (4) *A Tract on Monetary Reform* (1923), (5) the two-volume *A Treatise on Money* (1930), and (6) a series of four newspaper articles published in *The Times* in early 1937, one year after the publication of his famous *The General Theory of Employment Interest and Money* (1936). Except for the *General Theory*, which deals mainly with unemployment and will not be examined here, these works are largely concerned with the problem of inflation. They are examined in the order listed above to show the consistency of Keynes' anti-inflation attitudes over time.

Early Writings

Keynes' strong aversion to inflation is evident in even his earliest work. It appears, for example, in his *Indian Currency and Finance* (1913). There he emphatically rejects the argument that "a depreciating currency is advantageous . . . to trade," contending that any advantages derived from inflation are "only temporary" and that they "occur largely at

¹ For a recent expression of this view see Buchanan and Wagner [1] who assert that "Lord Keynes himself" must "bear substantial responsibility" for our "apparently permanent and perhaps increasing inflation" [1; p. 4]. "Without Keynes," they write, "inflation would not be the clear and present danger to the free society that it has surely now become. The legacy or heritage of Lord Keynes is the . . . intellectual legitimacy provided to . . . deficit spending, inflation, and the growth of government" [1; p. 24].

the expense of other members of the community” and therefore do “not profit the country as a whole” [5; p. 2]. He takes an even tougher attitude in his *Economic Consequences of the Peace* (1919), condemning inflation in the harshest possible terms. He says:

Lenin is said to have declared that the best way to destroy the capitalist system was to debauch the currency. By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. By this method they not only confiscate, but they confiscate arbitrarily; and, while the process impoverishes many, it actually enriches some [6; pp. 148-9].

He agrees with Lenin that inflation has the potentiality of destroying the basis of capitalist society.

Lenin was certainly right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction, and does it in a manner which not one man in a million is able to diagnose [6; p. 149].

He then proceeds to specify at least four ways that rapid inflation works to weaken the social fabric and to undermine the foundations of the capitalist free-market system. First, unforeseen inflation, he says, results in a capricious and totally “arbitrary rearrangement of riches” that violates the principles of distributive justice. Besides its inequities, inflation also renders business undertakings riskier and thereby turns “the process of wealth-getting . . . into a gamble and a lottery.” In generating risk and injustice, inflation “strikes not only at security, but at confidence in the equity of the existing distribution of wealth” [6; p. 149]. Second, inflation violates long-term arrangements based on the assumed stability of the value of money. In so doing, inflation disturbs contracts and upsets “all permanent relations between debtors and creditors, which form the ultimate foundation of capitalism” [6; p. 149]. Third, inflation generates social discontent and directs it against businessmen whose windfall profits are wrongly perceived to be the cause rather than the consequence of inflation. This discontent is exploited by governments which “being many of them . . . reckless . . . as well as weak, seek to direct on to a class known as ‘profiteers’ the popular indignation against the more obvious consequences of their vicious methods” [6; p. 149]. In other words, governments actually responsible for causing inflation seek to shift the blame onto businessmen who consequently lose “confidence in their place in society” and become “the easy victims of intimidation” by “governments of their own making,

and a Press of which they are the proprietors” [6; p. 150]. By making business a scapegoat and target of vilification and control, inflation reinforces anti-business attitudes and weakens support for what Keynes called “the active and constructive element in the whole capitalist society”² [6; p. 149].

Finally, inflation tends to breed such misguided remedies as “price regulation” and “profiteer-hunting” that may do more damage than the inflation itself. Keynes was especially critical of the tendency of governments to resort to price controls, which in his view lead to resource misallocation and a reduced supply of goods, thereby compounding inflationary pressures.³ Regarding the disincentives to real output occasioned by controls, he said that “the preservation of a spurious value for the currency, by the force of law expressed in the regulation of prices, contains in itself, however, the seeds of final economic decay, and soon dries up the source of ultimate supply.” For, by freezing prices at what are likely to be disequilibrium levels, controls constitute “a system of compelling the exchange of commodities at what is not their real relative value,” and this “not only relaxes production but leads finally to the waste and inefficiency of barter” [6; pp. 149-50].

Summarizing the foregoing harmful consequences of inflation, he concludes that governments that allow inflation to get out of control do irreparable damage to the established social and economic order. In so doing they are “carrying a step further the fatal process which the subtle mind of Lenin had consciously conceived.” For,

By combining a popular hatred of the class of entrepreneurs with the blow already given to social security by the violent and arbitrary disturbance of contract and of the established equilibrium of wealth which is the inevitable result of inflation, these governments are fast rendering impossible a continuance of the social and economic order. . . . But they have no plan for replacing it [6; p. 150].

It would be difficult indeed to find a more damning indictment of inflation and inflationist policies than that presented by Keynes in *The Economic Consequences of the Peace*. Anyone seeking evidence that he was an inflationist will not find it there; on the contrary, not only does he display a marked aversion to inflation, but he also sees no compensating benefits to offset its evils.

² Note that the very inflationary evils denounced by Keynes are likewise stressed by Buchanan and Wagner [1; pp. 61-5]. This in a book, ironically enough, purporting to show that Keynes was an inflationist.

³ Buchanan and Wagner [1; p. 54] echo Keynes' contention that the harm wrought by controls must be counted among the major costs of inflation.

Policy Advice in Early 1920

Keynes' concern with the dangers of inflation influenced his policy advice in the post-war boom of 1920 when an outburst of inflation threatened the British economy.⁴ Then as now a crucial policy question was: What is the least costly way to remove inflation? Should it be done gradually or swiftly in one stroke? Keynes' answer was clear enough: reject gradualism and use the monetary shock approach. Accordingly, when consulted by Austen Chamberlain, the Chancellor of the Exchequer, in early February 1920, he unhesitatingly recommended "a stiff dose of dear money" to halt the inflation [3; p. 458]. He urged a severely restrictive monetary policy, entailing a steep jump in interest rates, to break the inflationary boom. Asked to specify the degree of monetary restriction he would be willing to tolerate in order to end inflation, Keynes, according to Chamberlain, indicated that "[he] would go for a financial crisis Would go to whatever rate is necessary . . . and keep it at that for three years" [3; p. 458]. In this connection Keynes argued that given the high inflationary expectations then prevailing, sharp increases in nominal interest rates were essential in order to raise the real interest rate sufficiently to discourage borrowing and spending [3; p. 463]. This, he argued, would not cause serious unemployment because there was a wide margin of safety before business would be operating below full capacity.

Keynes' advocacy of tight money in this episode clearly rested on his fear of the damage that continuing rapid inflation could inflict on society and the capitalist system. He stated as much in a memorandum written shortly after his meeting with the Chancellor of the Exchequer. He feared, he noted, that persistent inflation would generate "social unrest" and "strike at the whole basis of contract, of security, and of the capitalist system generally," eventually leading to "socialistic control" over industry. The choice, he thought, was between "dear money or . . . socialization of the supply of capital" [3; p. 458-9]. Given these alternatives, Keynes was clearly in favor of dear money, a position he maintained for the rest of his career. He acknowledged this in January 1942 when, looking back at his earlier policy advice, he declared that he would "give today exactly the same advice that I gave then, namely a

swift and severe dose of dear money, sufficient to break the market, and quick enough to prevent at least some of the disastrous consequences that would otherwise ensue" [3; p. 462]. Keynes' 1942 statement suggests that even the intervening years of the Great Depression of the 1930s had not lessened his concern about the dangers of inflation, dangers that he had described earlier in his 1923 *A Tract on Monetary Reform*.

A Tract on Monetary Reform (1923)

Nowhere does Keynes express his concern for inflation more strongly than in the *Tract*. There his chief fear is that inflation may retard capital formation and inhibit long-term economic growth. He specifies at least three ways that this can happen. He notes first the inflationary disincentive to saving. By eroding the real value of past savings, inflation diminishes "the capacity of the investing class to save" and destroys "the atmosphere of confidence which is a condition of the willingness to save" [7; p. 29]. With a smaller portion of national income flowing into saving and investment, the rate of capital accumulation falls. And since, according to Keynes, "the national capital must grow as fast as the national labor supply" for "the maintenance of the same standard of life," it follows that a fall in capital growth below the required proportional rate will lower living standards [7; p. 29]. In short, by discouraging saving and capital formation, inflation may cause a fall in the aggregate capital/labor ratio (i.e., the amount of capital each laborer has to work with) and a corresponding drop in labor productivity and output per capita.

A second factor retarding capital accumulation is the undercharging of depreciation during inflation and the consequent inadequate provision for the replacement of worn-out capital. This occurs because depreciation charges on capital equipment are computed on the basis of original (historical) cost rather than replacement costs. These replacement costs rise with inflation. Thus when prices rise the depreciation charges calculated on the basis of original cost are too small to replace the worn-out capital. The result may be an unintended depletion of the capital stock. "In such conditions," said Keynes, a country "can even trench on existing capital or fail to make good its current depreciation." For it "is one of the evils of a depreciating currency that it enables a community to live on its capital unawares. The increasing *money* value of the community's capital goods obscures temporarily a diminution in the real quantity of the stock" [7; pp. 27-8].

⁴ For the details of Keynes' advice in this episode see Howson [3]. All references in this section are to Howson, who reproduces the relevant passages from Keynes' papers.

Yet a third adverse effect on capital formation, he noted, is the increased business risk resulting from inflation. For inflation adds to ordinary business risk the extra "risk directly arising out of instability in the value of money" [7; p. 33]. To compensate for this extra risk, businessmen add a risk premium to the rate at which they discount the future, and the higher discount rate discourages investment.

The discouraging effects of inflation on saving, investment, and growth were not the only inflationary evils described by Keynes in the *Tract*. Others included (1) the injustice and inequity resulting from inflationary redistributions of income and wealth, (2) the resort to spurious inflation remedies—e.g., price controls, excess profits taxes, profiteer-hunting and the like—remedies that constitute "not the least part of the evils," often doing more harm than the inflation they are designed to cure, and (3) the social resentment and discontent produced by inflation. This resentment, when directed against the business class whose windfall profits are wrongly perceived as the cause rather than the consequence of inflation, works to discredit enterprise and to weaken support for the productive element of society—"the prop of society and the builder of the future" [7; p. 24].

Having discussed the adverse effects of inflation on capital formation, economic growth, distributive justice, and social stability, respectively, Keynes next considers the alleged beneficial output effects of inflation. He notes that unanticipated inflation may temporarily stimulate economic activity by raising profits and profit expectations. Profits rise, he said, because wages and other costs lag behind rising prices during inflation. And with nominal wages lagging behind prices, real wages fall, thus inducing producers to step up their employment of labor. Likewise, the lagged adjustment of market interest rates to inflation and the consequent fall in the real cost of borrowing leads producers to expand their operations. Finally, inflation reduces the real burden of fixed charges, thereby giving a temporary fillip to profits and to economic activity. But Keynes insisted that any such stimulus would most likely be small and short-lived. Moreover it would constitute an undesirable "overstimulation of industrial activity" requiring undue strain on capacity and a corresponding "over-exertion" of labor [7; p. 36]. For these reasons he judged the overall benefits to be minimal.

Consequently, when Keynes weighed the benefits of inflation against the evils, he found the latter to far outweigh the former and accordingly came down heavily in favor of price stability. He summarized his case for price stability best when he declared that, be-

cause "inflation is unjust and deflation is inexpedient . . . , both are evils to be shunned. The individualistic capitalism of today, precisely because it entrusts saving to the individual investor and production to the individual employer, *presumes* a stable measuring-rod of value, and cannot be efficient—perhaps cannot survive—without one" [7; p. 36]. It follows, he said, that the government should make price stability its primary policy goal. For, "if we are to continue to draw the voluntary savings of the community into 'investments,' we must make it a prime object of deliberate State policy that the standard of value, in terms of which they are expressed, should be kept stable" [7; p. 16]. These are hardly the sentiments of an inflationist. On the contrary, they are an indication of Keynes' hard-line antipathy to inflation and his belief in the absolute necessity of price level stability.

Monetarist Aspects of the *Tract*

The analysis of inflation contained in the *Tract* has much in common with the position taken by today's monetarists. Specifically, inflation is discussed within the context of an analytical model that is remarkably monetarist in spirit, embodying such standard monetarist ingredients as (1) the quantity theory of money, (2) the concept of inflation as a tax on real money balances, (3) the monetary approach to exchange rate determination, and (4) the Fisherian distinction between real and nominal interest rates. The paragraphs below summarize Keynes' views on these elements in order to demonstrate that he was not the stereotype nonmonetarist caricature of the textbooks.

Quantity Theory of Money

The Keynes of the *Tract* was an unequivocal adherent of the quantity theory. "This theory," he said, "is fundamental. Its correspondence with fact is not open to question" [7; p. 61]. His own version of the theory as elucidated in the *Tract* is essentially the same as the modern monetarist version and embodies the following monetarist elements:

- (1) a money supply and demand theory of price level determination,
- (2) the notion of money stock exogeneity, implying money-to-price causality,
- (3) the concept of the demand for money as a stable function of a few key variables, and
- (4) a focus on the special role of price expectations in the money demand function.

Regarding the money supply and demand theory of the price level, he said that "two elements" determine

general prices and the value of money. "First, the quantity, present and prospective, of [money] in circulation. Second, the amount of purchasing power which it suits the public to hold in that shape" [7; p. xviii]. Elsewhere in the *Tract* he says that the price level "depends on the currency policy of the government and the currency habits of the people, in accordance with the quantity theory of money" [7; p. 71].

Having declared that general prices depend on money supply and demand, he next presented the quantity theory in the form of the equation $P = M/D$ or $M/P = D$, which says that the price level, P , adjusts to equate the real (price-deflated) value of the given nominal money stock, M , with the public's real demand for it, D .⁵ He then proceeded to analyze the variables of the foregoing equation. Regarding the nominal money stock, M , he said that it is an exogenous variable controllable by the central bank such that causation runs from money to prices rather than vice-versa as claimed by some believers in a passive, demand-determined money stock. The money supply, Keynes declared, is "under the control (or ought to be) of the central banking authorities" who thus possess the means to stabilize prices [7; p. 68]. With respect to the equation's money demand component, D , Keynes stated that it is determined by several underlying factors including (1) "wealth," (2) "habits," (3) interest rates ("the estimated advantages of keeping more cash on hand compared with those of . . . investing it"), and (4) expected inflation ("the trust or distrust which the public feel in the prospect of the future value" of the currency) [7; pp. 62, 64, xviii]. Here is the monetarist notion of the demand for money as a stable function of a few key variables.

Of these four variables Keynes paid particular attention to the expected rate of inflation, pointing out that its inclusion in the money demand function means that money demand is not completely independent of money supply. For, according to him, rapid increases in money supply may generate expectations of future inflation (expectations that constitute the anticipated depreciation cost of holding money) and thereby lower real money demand. This, he noted, implies that money growth affects prices

⁵ Keynes [7; p. 63] employed a slightly different notation, writing the equation as $n=pk$, where n denotes the nominal money stock, p the price level, and k the quantity of real cash balances people desire to hold. He also presents a more elaborate version of the equation, namely $n=p(k+rk')$, where k and k' denote real cash balances held by the public in the form of currency and checking deposits, respectively, and r is the ratio of cash reserves that banks hold behind their deposit liabilities.

both directly and also indirectly through the price expectations variable in the money demand function. The indirect effect magnifies the initial impact of money growth on inflation, causing prices to rise faster than the money stock itself. In his own words, "a change in [the money stock] due to causes which set up a general expectation of a further [inflationary] change in the same direction, may produce a *more* than proportionate effect on [prices]" [7; p. 66]. Prices outstrip money, he said, because inflationary money growth, by generating expectations of future inflation and thereby raising the anticipated depreciation cost of holding money, reduces the demand for real cash balances and stimulates a corresponding rise in money turnover. This expectations-induced rise in the circulation velocity of money puts additional upward pressure on prices, thus magnifying the impact of money growth on inflation.

Keynes pointed out that this sequence of events had actually occurred in the German hyperinflation of 1922-1923 when prices rose faster than the nominal money stock. He also noted that the same sequence of events explained the perplexing fall in the real or price-deflated money stock that had puzzled German observers at the time. That is, he said that the expectations-induced flight from cash and the corresponding rise in velocity had caused prices in Germany to rise faster than the nominal money stock thereby producing the observed shrinkage of the real or price-deflated money stock. Conversely, he noted that expectations of slower money growth that reduce the public's "degree of . . . distrust of the future value of the money" will "lead to some increases in their use of it" resulting in a rise in the real money stock [7; p. 47].

Finally, Keynes employed the quantity theory in his policy analysis, arguing (1) that inflation is caused by an excess supply of money, (2) that such monetary excess could stem from falls in money demand as well as from rises in money supply, (3) that the central bank possesses the power to prevent the latter and counteract the former, and (4) that it should employ this power to stabilize prices. For price stability he recommended deliberate countercyclical movements in the money supply to offset or nullify the procyclical impact of changes in money demand on prices. He thought that real money demand fluctuated with the state of business confidence, falling in booms, rising in slumps, and thereby amplifying cyclical movements of prices. "The characteristic of the 'credit cycle,'" he said, "consists in a tendency of [real cash balances] to diminish during the boom and increase during the depression" [7; p. 67]. To

counteract these he advocated deliberate monetary contraction in booms and monetary expansion in slumps. "The time to deflate the supply of cash," he said, "is when real balances are falling . . . and . . . the time to inflate the supply of cash is when real balances are rising, and not, as seems to be our present practice, the other way round" [7; p. 149]. In so stating, he rejected the monetarist case for a fixed monetary growth rate rule (which he argued "is bound to lead to unsteadiness of the price level" when money demand fluctuates) in favor of discretionary monetary management [7; p. 69]. "In the modern world of paper currency and bank credit," he declared, "there is no escape from a 'managed' currency" [7; p. 136]. Note, however, that while he rejected the monetarist case for rules instead of discretion in the conduct of monetary policy, he did voice the modern monetarist complaint that discretionary monetary movements frequently tend to be procyclical rather than countercyclical. That is, he complained that the British monetary authorities had perversely engineered monetary expansions in booms when money demand was falling and monetary contraction in slumps when money demand was rising thereby aggravating rather than mitigating inflation and deflation. These policy errors notwithstanding, however, he remained a strong advocate of discretionary monetary intervention in the pursuit of price stability.

Inflation as a Tax on Real Money Balances

The second monetarist ingredient that Keynes enunciates in the *Tract* is the concept of inflation as a tax on real money balances. As noted by the late Harry Johnson, this inflation tax analysis constitutes an essential part of the quantity theory approach to inflation. Consistent with that approach, Keynes argues that inflation is "a method of taxation" which the government uses to "secure the command over real resources, resources just as real as those obtained by [ordinary] taxation" [7; p. 37]. "What is raised by printing notes," he writes, "is just as much taken from the public as is a beer duty or an income tax" [7; p. 52]. Regarding the inflation tax he says that "a government can live by this means when it can live by no other. It is the form of taxation which the public find hardest to evade and even the weakest government can enforce, when it can enforce nothing else" [7; p. 37].

In discussing the inflation tax, Keynes stresses that it is a tax on cash balances. The burden of the tax, he says, falls on cashholders, i.e.,

on the holders of the original . . . notes, whose notes [after inflation] are worth . . . less than they were before. The inflation has amounted to a tax . . . on all holders of notes in proportion to their holdings. The burden of the tax is well spread, cannot be evaded, costs nothing to collect, and falls, in a rough sort of way, in proportion to the wealth of the victim. No wonder its superficial advantages have attracted Ministers of Finance [7; p. 39].

He next explains how inflationary money creation transfers real resources from cashholders to the government. He notes that a given, say, 25 percent inflation rate requires an equivalent rate of rise of cash holdings just to maintain real money balances at desired levels. To accomplish this, cashholders cut expenditures on goods and services and add the unspent proceeds to money balances. The reduced private outlay for goods and services releases resources which the government acquires with newly issued money that is then added to private cash balances. In this way inflation enables the government to appropriate real resources from cashholders just as surely as if it had taken part of their earlier money balances and spent the proceeds on goods and services. How much the government gets depends upon the quantity of real balances the public wishes to hold when the inflation rate is 25 percent. Assuming the public desires real balances totaling \$36 million, the government's tax take is 25 percent of that sum or \$9 million. Or, as Keynes himself put it in discussing the effects of the hypothetical 25 percent inflation tax on real balances of \$36 million, "by the process of printing the additional notes the government has transferred to itself an amount equal to \$9 million, just as successfully as if it had raised this sum in taxation" [7; p. 39].

Keynes' discussion of the inflation tax includes a sophisticated analysis of the optimal rate of inflation from the point of view of maximizing tax revenue. In this connection he makes four points. First, from the formula that tax yield equals tax rate times tax base, it follows that the yield of the inflation tax is the multiplicative product of the inflation rate (tax rate) and real cash balances (tax base), respectively. Second, the tax base is not invariant to the tax rate but falls when the latter rises. That is, when the government raises the tax rate the tax base tends to shrink as people seek to avoid the inflation tax by changing their habits and economizing on real money holdings. Were this not so, said Keynes, "there would be no limit to the sums which the government could extract from the public by means of inflation" [7; p. 42]. Third, because the tax base shrinks with rises in the tax rate, the government will realize

more revenue from a tax rate rise only if it causes a less-than-proportionate fall in the base. "A government has to remember," he said, "that even if a tax is not prohibitive it may be unprofitable, and that a medium, rather than an extreme, imposition will yield the greatest gain" [7; p. 43]. Fourth, it follows that there is one inflation rate that maximizes tax revenue and that occurs where the percentage increase in the tax rate equals the percentage shrinkage in the tax base, i.e., where the elasticity of real money demand with respect to the inflation rate is unity. Here is the concept of the tax-maximizing rate of inflation that plays such a key role in the modern monetarist analysis of inflationary finance.

Monetary Approach to Exchange Rates

A third monetarist concept used by Keynes in the *Tract* was the monetary approach to exchange rate analysis. This approach rests on the view that the exchange rate between two national currencies is determined by the respective national money supplies and demands in the two countries and the resulting effects on their respective general price levels. Regarding the monetary approach, Keynes said that the foreign exchanges "depend . . . on the relative price levels established here and abroad by the respective credit [i.e., monetary] policies adopted here and abroad" [7; p. 146]. He reached this conclusion by combining the quantity theory of money with the purchasing power parity theory of exchange rates. The quantity theory of course says that the general price level is determined by the demand-adjusted money stock, i.e., by the nominal stock of money per unit of real money demand. And the purchasing power parity doctrine, he explained, holds that the exchange rate tends to equal the ratio of the price levels in the two countries concerned. Taken together, the quantity theory and the purchasing power parity doctrine imply that the exchange rate is determined by relative demand-adjusted money stocks operating through relative national price levels.⁶

From the foregoing Keynes concluded that if both countries inflate their currencies at the same rate the

⁶ Note that this version of the monetary approach ignores certain nonmonetary determinants of exchange rates, namely (1) the real terms of trade and (2) the relative prices of traded and nontraded goods, respectively. As pointed out by Keynes, these factors may be safely disregarded only when the source of exchange rate disturbance is of a predominantly monetary origin. Regarding such monetary shocks, he argues that they have in fact "been so dominant in their influence that the theory has been actually applicable with remarkable accuracy" [7; p. 82].

exchange rate will stabilize, whereas if they inflate at different rates the exchange rate will appreciate in favor of the country with the lower inflation rate and depreciate against the country with the higher inflation rate.⁷ He also concluded that floating exchange rates insulate a country from inflationary movements developing abroad. That is, he contended that, under floating exchange rates an inflationary rise in foreign prices would be offset by an equal and opposite fall in the exchange rate leaving the domestic currency price of foreign goods unchanged. For this reason he believed that floating exchange rates were an absolute necessity for any country trying to achieve domestic price stability via the operation of domestic monetary policy. With respect to his analysis of exchange rates, the Keynes of the *Tract* belongs in today's monetarist camp.

Nominal versus Real Interest Rates

Finally, Keynes employed in the *Tract* the monetarist or Fisherian distinction between nominal and real interest rates, i.e., between the interest rate actually charged on loans and the inflation-corrected level of that rate. With respect to the two rates he stated the following points. First, for any given nominal rate, inflation reduces the real rate below the nominal rate. The real rate falls relative to the nominal rate because borrowers can repay their loans in depreciated dollars, i.e., in money whose real purchasing power is less than the amount originally borrowed. Second, the nominal rate embodies expected inflation which may temporarily lag behind actual inflation resulting in incomplete adjustment of the nominal rate.

Third, if the nominal rate does not fully reflect rising prices, then even high market rates may translate into low or negative real rates after correction for inflation. As Keynes himself expressed it,

in a period of rapidly changing prices, the money rate of interest seldom adjusts itself adequately or fast enough to prevent the real rate from becoming abnormal [7; p. 20]. Thus, when prices are rising, the businessman who borrows money is able to repay the lender with what, in terms of real value, not only represents no interest, but is even less than the capital originally advanced; that is, the real rate of interest falls to a negative value, and the borrower reaps a corresponding benefit [7; pp. 19-20].

⁷ In his words, "the rate of exchange can be improved in favour of one of the countries by a financial policy directed towards a lowering of its internal price level relatively to the internal price level of the other country" [7; p. 88].

In such cases, high nominal rates are neither onerous to borrowers nor a deterrent to borrowing and spending. On the contrary, they are a bargain to borrowers and, at least temporarily, a stimulus to economic activity. The contention that high nominal interest rates may correspond to low or negative real rates during periods of rapid inflation and, therefore, may fail to discourage borrowing and spending, underlies the modern monetarist argument that nominal rates themselves are an unreliable indicator of the degree of monetary ease or tightness.

Fourth, nominal rates tend to be bid up by eager borrowers during periods of inflation, implying that high market interest rates are a result not a cause of rising prices. "It is for this reason," said Keynes, "that a high bank rate should be associated with a period of rising prices, and a low bank rate with a period of falling prices" [7; p. 20]. Fifth, in the long run nominal rates tend to fully adjust for inflation and the real rate returns to its preexisting equilibrium level. "The apparent abnormality of the money [nominal] rate of interest at such times [i.e., in periods of rapid inflation]," said Keynes, "is merely the other side of the attempt of the real rate to steady itself" [7; p. 20].

In stating these points, Keynes closely followed Irving Fisher, perhaps the leading monetarist of the time. In fact, considering all the monetarist elements in the *Tract*, it is hard to escape the conclusion that, in the 1920s at least, Keynes was largely a monetarist in his analysis of inflation. It is hard to reconcile the Keynes of the *Tract* with the stereotype nonmonetarist Keynes of the modern textbooks. It is even harder to square the Keynes of the *Tract* with the caricature of him as an out-and-out inflationist. For as shown above, throughout the *Tract* he was extremely hostile toward inflation, deploring its evils, minimizing its benefits, and calling for its quick removal.

Nor did he change his mind in his *A Treatise on Money* (1930). To be sure, there he tentatively advances a theory of inflation-induced growth and even conjectures that mild gentle inflation may have contributed to the industrialization of the West. But his basic stance is unmistakably that of an anti-inflationist and he still comes down strongly in favor of absolute price stability as the ideal policy goal.

A Treatise on Money (1930)

If the *Tract* is famous for its quantity theory-inflation tax analysis, the *Treatise* is equally famous for its celebrated "fundamental equations of prices" and the corresponding distinction between income in-

flation and profit inflation.⁸ Constituting the central analytical core of the *Treatise*, the fundamental equations express price level increases as the sum of two components, namely (1) increases in profit per unit of output, and (2) increases in unit costs of production (chiefly labor costs). Of these two components of price change—namely changes in profit and changes in costs, respectively—Keynes labels the former "profit inflation" and the latter "income inflation." Profit inflation occurs when prices are outrunning costs, leaving a large and growing margin for profit. By contrast, income inflation occurs when wages are rising as fast as prices thereby preventing profit growth.

It should be noted that Keynes' income inflation does not correspond to what today is called cost-push inflation, i.e., an exogenous rise in wages and hence prices caused, for example, by the exercise of trade union monopoly power. Rather it is the induced endogenous result of an increased demand for labor and other resources generated by prior profit inflation.⁹ For, according to Keynes, most income inflations do not stem from autonomous ("spontaneous") increases in wages caused by "the powers and activities of trade unions" [8, p. 151]. Instead they stem from profit-induced rises in the demand for (and hence prices of) labor and other factor resources. That is, a profit inflation stimulates firms to expand output and hence their demand for factors of production. This leads to a bidding up of factor prices that raises production costs and generates income inflation. This process continues until wages and other factor prices rise sufficiently to eliminate excess profits.¹⁰ Seen this way, income inflations possess three distinctive features. They occur at the expense of profit inflations, eventually annihilating the latter. They need not cause a rise in prices since they are largely offset by compensating falls in profit inflation. Finally, they are a crucial part of the process that transforms inflation-engendered profits into costs and thereby terminates the temporary stimulus to economic activity.

Having developed the distinction between profit and income inflation, Keynes used it to analyze the effect of inflation on output and economic growth. Regarding these effects he reached two main conclusions.

⁸ For a recent exposition of the "fundamental equations" and the corresponding concepts of income and profit inflation, see Patinkin [11; pp. 33-8]. What follows draws heavily from Patinkin.

⁹ This point is stressed by Patinkin [11; p. 37].

¹⁰ See Keynes [8; pp. 241-2] and Patinkin [11; pp. 37, 45].

First, only profit inflation has the power to stimulate output and growth. "It is the teaching of this treatise," he said, "that the wealth of nations is enriched, not during income inflations, but during profit inflations . . . at times, that is to say, when prices are running away from costs" [9; p. 137]. More precisely, profit inflation stimulates both current and long-term real output. It stimulates current output by raising prices relative to wages thus lowering real wages and increasing employment. And it stimulates long-term real output by shifting income from wages to profit thereby permitting faster capital accumulation and a higher rate of economic growth. In short, the effects of profit inflation include "the spirit of buoyancy and enterprise and the good employment which are engendered; but mainly the rapid growth of capital wealth and the benefits obtained from this in succeeding years" [9; p. 144]. These benefits, however, are possible only when prices are outrunning costs, leaving a substantial margin of profit to finance investment and growth. They cannot occur in income inflations where wages rise as fast as prices and thus annihilate the very profits that constitute both the means and the inducement to economic growth. It follows that income inflation, unlike profit inflation, is incapable of enhancing growth.

Second, what matters for investment and growth is how long it takes for profit inflation to give way to income inflation, and this depends on the speed of adjustment of wages to prices. If the interval is short and wages adjust rapidly to prices, then inflation will have little or no impact on capital formation and growth. But if the interval is long and wages adjust slowly to prices, then the stimulus may be considerable and profit inflation, in Keynes' own words, becomes "a most potent instrument for the increase of accumulated wealth" [8; p. 267]. Regarding the interval, Keynes apparently felt that it had indeed been long in particular historical episodes—"quite long enough," he said, "to include (and, perhaps to contrive) the rise . . . of the greatness of a nation" [9; p. 141]. In this connection he advanced the hypothesis that the early industrialization of England and France had been powered by profit inflation. "It is unthinkable," he declared, "that the difference between the amount of wealth in France and England in 1700 and the amount in 1500 could ever have been built up by thrift alone. The intervening profit inflation which created the modern world was surely worth while if we take the long view" [9; p. 145].

Lest one wrongly conclude from the foregoing that Keynes of the *Treatise* was an out-and-out inflation-

ist, three cautionary observations should be made. First, he was referring to gently rising prices and not to the rapid double-digit inflation that is unfortunately so common today. More precisely, he was referring to slow creeping secular inflation of no more than 1 to 2 percent per year. Today such mild inflation would be viewed as constituting virtual price stability. Second, his analysis of beneficial inflation refers chiefly to capital-poor preindustrial societies and not to wealthy modern capitalist economies.¹¹ Most of his historical examples are taken from the pre-capitalist or early-capitalist era when western Europe was "very poor in accumulated wealth" and "greatly in need of a rapid accumulation of capital" [9; p. 145 and 8; p. 268]. Under these conditions it is conceivable that slowly-creeping profit inflation might indeed have spurred industrialization not only by diverting resources from consumption to capital formation, but also by breaking feudal bonds, stimulating enterprise, encouraging market-oriented activity, and widening the scope of the market. These latter benefits, however, are no longer available to wealthy, market-oriented modern capitalist economies that are more likely to find secular inflation a curse rather than a blessing. For this reason Keynes refrained from recommending even slightly inflationary policies for modern economies.

Finally, it should be remembered that Keynes was referring to profit inflation characterized by prices persistently rising faster than wages and not to modern inflations in which wages sometimes rise ahead of prices or at least follow them without delay thereby wiping out the profits generated by the price increases.¹² As previously mentioned, Keynes held that inflation stimulates growth only if wages lag substantially behind prices leaving a large and persistent margin of profit to finance capital formation. This wage lag, however, is hardly characteristic of modern inflations in which wages rise swiftly not only to restore real earnings eroded by past inflation but also to protect real earnings from expected future inflation. The clear implication is that Keynes would have opposed these modern inflations, which according to his analysis are income rather than profit inflations.

Accordingly, it is not surprising that Keynes, at the end of a long passage extolling the historical accomplishments of profit inflation, nevertheless declared, "I am not yet converted, taking everything into ac-

¹¹ On this point see Haberler [2; pp. 98-100].

¹² See Haberler [2; p. 99].

count, from a preference for a policy today which, whilst avoiding deflation at all costs, aims at the stability of purchasing power as its ideal objective" [9; p. 145]. There is no reason to believe that he ever changed that position. On the contrary, there is strong evidence that he remained a determined foe of inflation and an adamant proponent of price stability even to the extent of warning of the potential danger of inflation in 1937 when the unemployment rate was in excess of 10 percent of the labor force.

Articles in *The Times* (1937)

The most convincing evidence of his continuing strong opposition to inflation in the 1930s, even after the publication of his celebrated *General Theory*, appears in four articles he wrote for *The Times* in early 1937.¹³ There, in discussing policies for dealing with unemployment at the business cycle peak of 1937, he made it abundantly clear that his primary concern was preventing inflation. In particular, he argued that the 1937 unemployment rate, although very high ("indeed, as high as 12½ percent"), was nevertheless at its minimum noninflationary level at which demand pressure must be curtailed to prevent inflation. Accordingly, he recommended a sharp cutback in government expenditure on the grounds that the economy was rapidly approaching the point where further increases in aggregate demand would be purely inflationary. "I believe," he said, "that we are approaching, or have reached, the point where there is not much advantage in applying a further general stimulus at the centre" [4; pp. 11, 44, 65]. In so stating, he identified the noninflationary full employment rate of unemployment (NIFERU) below which industrial bottlenecks frustrate the intended output and employment effects of aggregate demand expansion policy so that mainly prices rise.¹⁴ Beyond that point, he said, noninflationary reductions in joblessness could only be achieved by specific structural policies designed to lower the full employment rate of unemployment itself.

As for the existing high level of that unemployment rate, he attributed it to structural rigidities in the

British economy, in particular to a substantial mismatch between the location and skill mix of the labor force and the location and composition of demand. As he put it, "the economic structure is unfortunately rigid" and this rigidity prevented output and employment from responding to increases in aggregate demand so that only prices rise [4; pp. 11, 65-6]. It follows, he said, that to achieve noninflationary reductions in unemployment "we are more in need today of a rightly distributed demand than of a greater aggregate demand" [4; pp. 11, 66]. In other words, noninflationary reductions in unemployment cannot be obtained by expansionary aggregate demand-management policies but rather "require a different technique" [4; pp. 11, 14, 44, 66]. To this end he advocated specific structural policies to reduce unemployment on the grounds that noninflationary reductions in unemployment could only be achieved via measures that eradicate structural rigidities and lower the equilibrium unemployment rate itself. In so arguing, he foreshadowed by 30 years the modern monetarist concept of the natural rate of unemployment.¹⁵ He also refuted the popular contention that he was an inflationist who advocated full employment at any cost. That is, his 1937 articles amply demonstrate that, far from being an inflationist, his main consideration was preventing inflation—even at a time when the unemployment rate exceeded 12 percent. The same articles show that, far from advocating full employment at any cost, he clearly thought that there was a fairly high level of unemployment at which expansionary aggregate demand policy should be curbed to prevent inflation. From that level downward he insisted that unemployment must be dealt with not by the general expansion of aggregate demand but rather by specific structural policies that reduce the noninflationary unemployment rate itself. In short, there is nothing in the articles to suggest that Keynes had ever changed his mind about inflation. On the contrary, he shows the same concern for inflation in his 1937 articles that he earlier displayed in the *Tract*.

¹³ These articles are reprinted and discussed in Hutchison [4]. Unless otherwise noted, all references in this section are to Hutchison.

¹⁴ The NIFERU concept also appears in the *General Theory* where Keynes asserts that, beyond a certain point, structural impediments ("a series of bottle-necks") would prevent the noninflationary expansion of output and employment long before full capacity is reached. At the bottleneck point any further increase in aggregate demand would, in his words, largely "spend itself in raising prices, as distinct from employment" [10; pp. 300-1].

¹⁵ Hutchison stresses this point, arguing that Keynes "suggested a similar concept to that now called—following Professor Milton Friedman—a 'natural rate' of unemployment in that he stressed 'the unfortunately rigid' elements in the British economy which made it undesirable to try to reduce unemployment further by the expansion of central government demand" [4; pp. 14-15]. Moreover, "Keynes's 'different technique' . . . corresponded, in some important respects, with what today, following Professor Friedman, is described as reducing the natural rate of unemployment" [4; p. 46]. Similarly, Samuel Brittan writes that "Keynes's idea of the level of unemployment which would exist without demand deficiency seems astonishingly similar to Milton Friedman's 'natural' rate of unemployment" [4; p. 63, n. 21].

Concluding Comments

The main conclusion of this essay is that Keynes was neither the subtle inflationist nor the extreme nonmonetarist that he is sometimes depicted as being. On the contrary, his writings reveal that he consistently deplored inflation, that he warned unceasingly of its dangers, and that he urged that its avoidance be made a primary objective of public policy. In these respects he shared much with modern monetarists, even to the point of using similar analytical tools.

In that perspective, a key question is how the misconception that he was an inflationist could have arisen. Whether it stemmed from his *General Theory* (where he prescribed deficit-spending easy money policies to eliminate excessive unemployment), or from the tendency of some self-styled modern Keynesians to invoke his magic name in behalf of their own inflationary full-employment schemes, or even from his own advocacy of discretion over rules in the conduct of monetary policy, his reputation as an inflationist is highly undeserved. For, with respect to the *General Theory*, he did not intend for his expansionist policy prescriptions to apply to inflationary situations. On the contrary, as documented above, he abandoned these prescriptions in

early 1937 upon the first signs of a possible inflation. Nor would he have had anything but scorn for modern Keynesian policies designed to trade off higher inflation for lower unemployment. His insistence on the primacy of the goal of absolute price stability would have been in direct conflict with such inflationary policies. Finally, his support of discretion over rules did not reveal an inflationary bias on his part but rather a belief that discretionary policy was necessary to compensate changes in the demand for money and hence to achieve price level stability. That is, he differed from the proponents of monetary rules not over the objective of price stability per se, but rather over the means to achieve that objective. There is nothing in his writings to indicate that he equated proper discretionary policy with the use of price inflation to expand output and employment. On the contrary, he thought that discretionary policy offered the best means of avoiding inflation and achieving price stability. In short, given his beliefs about the efficacy of discretionary policy, his advocacy of such policy was perfectly consistent with his antipathy to inflation. That antipathy amply justifies F. A. Hayek's judgment that if Keynes were alive today he would be "one of the most determined fighters against inflation" [4; p. 40, n. 1].

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