The Economic Law of Motion of Modern Society

A Marx–Keynes–Schumpeter Centennial

edited by
H.-J. WAGENER
and
J.W. DRUKKER

CAMBRIDGE UNIVERSITY PRESS
Cambridge
London New York New Rochelle
Melbourne Sydney
Money and Crisis in Schumpeter and Keynes

HYMAN P. MINSKY

This year marks the hundredth anniversary of the birth of Keynes and Schumpeter. It is also the fiftieth year of the collapse of the American and the capitalist world's financial and monetary structure. Thus in 'mid-career' - from 1929 to 1933 - when Keynes and Schumpeter were approaching their fiftieth year, a traumatic event and a startling piece of evidence about the possible collapse of capitalist economies was unfolding; it seemed clear that it is possible for capitalism to collapse.

Keynes' response to this trauma of the economy was his magnificent performance: The General Theory of Employment, Interest and Money (Keynes 1936). According to Paul Samuelson, Schumpeter's response to the appearance of The General Theory was to abandon his long-promised and in-process book on Money. In 1939 Schumpeter's Business Cycles appeared (Schumpeter 1939). It was a minor performance when measured against either Keynes' General Theory or Schumpeter's 1911/1934 Theory of Economic Development (Schumpeter 1934). As far as Schumpeter's analysis of money, it can be argued that there was no advance beyond the vision of Chapter III, 'Credit and Capital', in the Theory of Economic Development. The crisis of capitalism evoked a magnificent theoretical performance from Keynes; Schumpeter's response was banal.

For well nigh 35 years after 1933 (until the second half of the sixties) no serious threat of a repetition of a 1929-33 type crisis occurred. In more recent years - and quite currently - there have been episodes that the world's financial markets and leading central banks interpreted as threatening another crisis. The central banks - particularly the Federal Reserve System in the United States - reacted to these threats by refinancing endangered organizations and by a 'generalized' infusion of bank reserves. We know that in spite of the obvious fragility of the financial structure no interactive collapse has taken place.

Understanding the causes and consequences of financial turmoil is an important current issue in economic theory and policy. I want to examine in part how Keynes and Schumpeter reacted to the crisis of 1929-33 in terms of their pre- and post-crisis theorizing. My view is that Schumpeter really did not react to the crisis, whereas, as I have argued elsewhere, Keynes' General Theory and the theoretical writing he did after The General Theory, can be best understood by assuming that the causes and consequences of financial crisis are central to the concerns that prompted The General Theory (Minsky 1975). While Schumpeter may be the source of great insights into the capitalist process, he did not leave a useful theoretical framework for the analysis of capitalism. On the other hand further progress in understanding capitalism may very well depend upon integrating Schumpeter's insights with regard to the dynamics of a capitalist process and the role of the innovative entrepreneurs into an analytical framework that in its essential properties is Keynesian. Capitalism has exhibited both fragility and resiliency over the century since the death of Marx and the birth of Keynes and Schumpeter. Keynes' analytical structure enables us to understand and even cope with the fragility of capitalism. Schumpeter's vision of entrepreneurship helps us understand the resilience of capitalism and in particular how policy reactions to slumps that reflect Keynesian insights lead to resilience and add new dimensions to the fragility of financial structures.

In my view Keynes over the period of the great collapse (1929-33) recognized that the economics of his Tract and Treatise was a dead end with respect to how our economy worked and the impact of money in our economy. Not being an Austrian and not writing with 'Marx' as the hidden subject, Keynes naturally fell into treating money within a framework of the Marshallian Short Runs and Long Run. If we take the old-fashioned partial equilibrium textbook models as the basis for discussing prices and production, then Keynes' short-run expectations of profits are 'embodied' in the short-run equilibrium of production with given facilities, whereas the long-run expectations of profits are related to a short-run disequilibrium (determined by the relation between price and average out-of-pocket cost) that either triggers movement along a long-run set of cost curves or entry of new firms with unchanged cost curves (Lerner 1937; Viner 1952). The 'book of blueprints' and the 'set of demand curves' confronting those whose expectations are relevant are not changing in Keynes but are 'new' and 'radically different' in much of Schumpeter. In Keynes' formal structure the high-uncertainty, high-potential-pay-off entrepreneurial/innovation investment decision is not central. In Keynes' structure great depressions - or even ordinary recessions - reflect an integrated view of capitalizing expected profits, supply prices of investment output and financing conditions: thus in Keynes the collapse of investment and a breakdown of the financing structure is a result due to the mechanisms of capitalism as such, whereas to Schumpeter such events are due to either the innovative reactions or secondary waves. Keynes interpreted the Great Depression as evidence that a paradigmatic shift in economic theory was necessary whereas to Schumpeter the old vision was retained and embedded in a set of Ptolemaic cycles.

The inability of Schumpeter to assimilate the Great Depression into his
thinking is somewhat surprising in the light of his early views. He noted that 'The money market is always, as it were, the headquarters of the capitalist system' (Schumpeter 1934: 126). This seemingly implies that the sequence of events that can be said to have been triggered by the break in stock market prices in October 1929 - that led to the complete closure of the banking system in March of 1933 - was not peripheral but rather was central to the functioning of a capitalist economy. This is so because 'the main function of the money or capital market is trading in credit for the purpose of financing development' (ibid.: 126, 127); i.e. money and the institutions of the money market - mainly banks - provide the means by which the rupturing of the stationary circular flow is effected. Not only development - which may really mean accumulation - but also profit, interest and the very spirit of capitalism depend upon the existence of a financial mechanism by which resources can be 'abstracted' from the circular flow and put at the behest of the dynamic entrepreneur. Therefore one would expect that a clear reading of Schumpeter would lead to views as to what conditions must be satisfied if the financial system is to continue to function as a handmaiden to entrepreneurship. Schumpeter may write of financial catastrophe, but he nowhere explains catastrophe. The significance of liability structures and the importance of business profits to banks as holders of business liabilities are only peripheral concerns in Schumpeter's analysis of both The Theory of Economic Development and Business Cycles.

One of the peculiarities in any discussion of money and crises in the thought of Schumpeter and Keynes is that Schumpeter's early vision, as stated in his The Theory of Economic Development, is more compatible with a view of money that leads to an understanding of financial crisis than was true of Keynes' early vision. The difference in the import of Keynes and Schumpeter over the 50 years since the culmination of the crisis in the collapse of 1933 is that Keynes quite clearly interpreted what happened in 1933 as a source for repudiating prior theory whereas Schumpeter interpreted the events as reinforcing the basic validity of his earlier views. Schumpeter's Business Cycles of 1939 is if anything a retrogression from his 1912 Theory of Economic Development. The three cycles - Kitchin, Juglar and Kondratieff - of Schumpeter's business-cycle theory are mechanical and the vast presentation of data is numbing rather than enlightening.

In the light of the problems of performance of the capitalist economies over the past several years interest in the ideas of our predecessors must be conditioned by the problems we face and whether they have any message for us. For both Schumpeter and Keynes the question is whether their insights help us build a monetary theory that is useful to our times. Perhaps because Schumpeter's career was largely spent in 'exile' whereas Keynes was always 'at home', Schumpeter on policy and economic structure is abstract whereas Keynes is concrete. One could not expect Schumpeter to have been a hard negotiator in an institution-building effort such as led up to the Fund and the

Bank, whereas Keynes threw himself fully into such projects. As Schumpeter remarked in his comment on Keynes, Keynes was always a patriot involved in projects for the betterment of the world; Schumpeter was not involved.

Keynes' essential contribution to an understanding of capitalist processes and why capitalism is different from the abstract 'socialisms' of Marshall and Walras lies in identifying the two-price-system nature of capitalism: in a capitalist economy there is a price system for capital assets as well as the price system of current output. Furthermore these two price systems are based upon quite different considerations. The price system for current output is based upon consumer preferences, consumer income, and costs, price and overhead, of business. The price system of assets - capital and financial - is based upon expected profits (cash flows), expected financing costs, the need to make payments on contracts and the insurance that assets embody because they can yield cash by being sold as well as income by being held or used.

The theory of the determination of the prices of capital assets is what Keynes called liquidity preference. This interpretation of liquidity preference as the determinant of the price system for capital assets is present in The General Theory but really is much clearer in the two expository exercises of late 1936 - the contribution to the Fisher Festschrift and the rebuttal to Viner (Keynes 1973: XIV, 101-8 and 109-23).

The argument in the Fisher Festschrift runs in terms of six propositions, four of which are held by both the orthodox theorists of his day and Keynes, and two of which differ. The like propositions are:

1. Interest on money is the premium obtainable on current cash over future cash (i.e. interest is what is observed on financial contracts).
2. All assets have a marginal efficiency in terms of themselves and in a world with complex financial structure these marginal efficiencies break down into the utility gained from income and liquidity and lost through carrying costs.
3. Assets will exchange at values proportionate to their marginal efficiencies.
4. Prices of assets in excess of the supply prices of investment output will induce investment.

The two propositions that differ, in the form that Keynes (1973: XIV, 104) states as his version, are:

5*. The marginal efficiency of money in terms of itself is, in general, a function of its quantity (though not of its quantity alone), just as in the case of other capital assets.
6*. Aggregate investment may reach its equilibrium rate under proposition (4) above, before the elasticity of supply of output as a whole has fallen to zero.

As Keynes made clear in chapter 17 of The General Theory, the marginal efficiency of money in terms of itself reflects the only utility that money yields: the utility value or efficiency on the margin of liquidity. If money increases as other things don't change then the utility of the liquidity embodied per unit of
money decreases; this implies that the money value of other assets rises. Furthermore, if the payment commitment on liabilities rises relative to the cash flows assets are expected to yield, then the marginal valuation of liquidity increases and the price of assets that are valued for the profits or interest they yield decreases. Liquidity preference, as affected by the quantity of money, financial commitments and the expected flow of profits (in the Kalecki sense) yield a price system of assets. And it is this price system resulting from the relationship between the marginal efficiencies of different capital assets including money, measured in terms of a common unit, which determines the aggregate rate of investment (Keynes 1973: XIV, 102). Proposition 6* states that investment as determined by the prices of capital assets and the supply prices of investment output can fall short of the amount necessary to yield full employment.

Unfortunately, Keynes' emphasis upon the price system of assets was lost in the controversy with Ohlin and Robertson over the loanable funds versus the liquidity-preference theory of interest and the formalisms of Hicks etc.

The basic proposition of this two-price-system view is straightforward: assets will trade at prices such that on the margin each asset yields the same utility per dollar of asset value. The utility embodied in holding a unit of money is derived from the utility of being protected against emergencies and being able to fulfil contracts without having to unload price-sensitive assets. Underlying the view that holding money to fulfil contracts yields utility is the 'fact' that there are payment commitments on account of prior engagements to banks and other holders of debts. In fact money in its most common form, as the liabilities of banks, is the outgrowth of financing contracts. In an abstract world, where government is virtually nonexistent and foreign entanglements are minimal, the commitments to pay money because of debts to banks exceed the amount of money in existence. All the monetarist propositions, which so clutter up the discourse, assume that the rate of payments by business and households to banks and the rate at which banks extend loans to finance business and households are always such that the path of bank liabilities in the form of money can be kept on track.

Whereas 'money' mainly yields 'utility' by these liquidity and insurance attributes, other assets have income, liquidity and insurance inputs to the 'utility' they yield their owners. Any shift in the income, liquidity or insurance that an asset is expected to yield will change its value in dollars. Furthermore, any change in preferences or expectations with respect to the future that increase the utility schedule for holding money will change the relative prices of assets as well as the dollar prices of non-money assets. Even before he published the General Theory Keynes (1972: IX, 151)\(^3\) wrote:

There is a multitude of real assets in the world which constitute our capital wealth—buildings, stocks of commodities, goods in course of manufacture and of transport, and so forth. The nominal owners of these assets, however, have not infrequently borrowed money in order to become possessed of them. To a corresponding extent the actual owners of wealth have claims, not on real assets, but on money. A considerable part of this 'financing' takes place through the banking system which interposes its guarantee between its depositors who lend it money, and its borrowing customers to whom it lends money wherewith to finance the purchase of real assets. The interposition of this veil of money between the real asset and the wealth owner is a specially marked characteristic of the modern world.

Money is the product of banking processes. I do not want to do more than recommend the work of Steiger and Heinsohn (a.s.) on the origins of money, in which they contend that money had its origin in banking: I do not want to enter over my head in discussing usages and institutions of three and four thousand years ago. I do want to assert though that whatever the validity of the Steiger/Heinsohn hypothesis of the origins of money, the proposition about money today for a capitalist economy is no money without banking and no banking without payment commitments in money to banks that at every moment exceed the amount of money in existence. This is the essence of the Keynesian veil of money — it is a financing veil.

Profit-maximizing bankers create money in exchanges with businessmen; this money is used by business to finance both positions in capital assets and investment. When the expected profitability from using capital assets is high, for given states of the utility of holding the protections embodied in money the price of capital will be high, the pace of investment will be high and profit-maximizing bankers will be eagerly seeking to expand their financing. Of course the Schumpeter—Kalecki insights make us recognize that profits are high because in the simple case investment is high.

The price level of investment output is determined by money wage rates, the interest rate on financing, and the protection, in the form of an expected excess of prices over labour, material and interest costs that profit-seeking and risk-aware bankers and businessmen 'negotiate'. Once the relation between the money supply and the price of capital and the relation between the price level of capital, the price level of investment and the rate of investments are introduced then there is an essential nominal aspect to the operations of the economy. More about this later.

Therefore Keynes (and Schumpeter) hold that money itself is not an outside asset but is introduced into the economy in a financing transaction which, in the abstract case of no government and household debts, is a transaction that finances investment output and ownership of capital assets. By these financing transactions a portion of the cash flows earned by business are committed to the payments to banks that are the 'second part' of the financing contract. But the cash flows or profits to business are, as Schumpeter had it, determined by investment spending.

Of course the Kalecki way of putting the basic accounting identities in terms of profits rather than G.N.P. makes the investment—profits relation much more precise than they ever were in Schumpeter (Kalecki 1971: chapter 7).\(^4\) Furthermore the Kalecki way of putting these relations makes it clear that
Gross Profits are related to Gross Investment – Schumpeter’s insistence that zero investment yields zero profits is, in special cases, valid for net investment and net profits – and that government deficits may lead to net profits even in the absence of net investment.\(^5\)

One of the basic characteristics of orthodox Walrasian theory is the ‘axiom of reals’. As Hahn (1983: 34) puts it:

> the objective of agents that determine their actions and plans do not depend on any nominal magnitudes. Agents care only about ‘real’ things, such as good (properly dated and distinguished by states of nature), leisure and effort. We know this as the axiom of the absence of money illusion, which it seems impossible to abandon in any sensible analysis.

But once the need to explain the price level of capital assets is put forth as a central problem of economic theory and once this price level is explained in terms of the relative utility of money and other assets then an essential nominal core is introduced into economic theory. As Keynes (1973: X1V, 103) put it:

> the orthodox theory maintains that the forces which determine the common value of the marginal efficiency of various assets are independent of money, which has, so to speak, no autonomous influence, and that prices move until the marginal efficiency of money, i.e. the rate of interest, falls into line with the common value of the marginal efficiency of other assets as determined by other forces. My theory, on the other hand, maintains that this is a special case and that over a wide range of possible cases almost the opposite is true, namely, that the marginal efficiency of money is determined by forces partly appropriate to itself, and that prices move until the marginal efficiency of other assets falls into line with the rate of interest.

That is, Keynes denies the validity of the axiom of reals. The essential capital asset pricing model and the view of banking by which the cash flows that validate contracts destroy money even as new financing creates money, implies that nominal values matter to agents that own, finance and create capital assets. One cannot legitimately use production functions and preference systems over real variables to determine anything of significance in a capitalist economy with a modern banking system.

A further implication of the denial of the axiom of reals is that Walras and Keynes are like oil and water; they don’t mix. Formal theory has to abandon the axiom of reals if formal theory is to be relevant to a modern economy. The axiom of reals is analogous to the axiom of parallels at an earlier stage in mathematical analysis; only by abandoning the axiom of parallels did particular significant problems become tractable.

As was mentioned earlier, Schumpeter’s 1939 Business Cycles is a regression from his 1911 The Theory of Economic Development. By the time he wrote the 1939 book Schumpeter was emphasizing Walras and Walrasian insights. But the development of Walrasian doctrines that was proceeding at that time (Hicks’ Value and Capital, 1939; Samuelson’s Foundations of Economic Analysis, 1947) was enshrining the ‘axiom of reals’. This implied that Schumpeter’s insights about the ‘supply conditions for money loans’ and the notion of money capital as the result of a capital asset valuation process that are so evident in The Theory of Economic Development were not only no longer central but barely relevant in the Business Cycles book. The ‘circular flow’ tendency was identified with the Walrasian equilibrium. Whereas Keynes made a substantial breakthrough in response to the critical experiment of the Great Depression, Schumpeter reacted to the crisis by pushing a mechanical ‘three cycle’ explanation of capital development.

Given that money supply directly influences the price of capital assets, it cannot directly affect the price of current output. The price level of current output, however, is linked to the price level of capital assets through aggregate demand and supply. Given a price level of capital assets, the supply price of investment output and the financing conditions for investment, the level of investment and, with the level of investment, aggregate demand as well as the derived demand for labour are determined. The state of aggregate demand and supply of labour at existing wage rates determines whether there will be upward or downward pressure on wage rates.

If the price of capital relative to the supply function of labour is such that investment and the demand for labour are high then money wages will rise, ‘pulling’ the supply function for investment towards the demand price for capital. Similarly the supply price of investment output will be raised when interest rates rise. The price level of current output is not determined by the quantity of money in any simple sense as the quantity theory puts. The path from money prices is by way of asset prices, investment financing and the reaction of money wages to excess demand or supply in labour markets. As is well known the response of wages to excess labour supply or demand is strongly conditioned by institutional relations. It is also apparent from the above that inflation affects the economy by affecting the price of output relative to the price of capital assets. The argument of the post-Friedman monetarists postulating neutrality of the behaviour of output and relative prices with respect to inflation is not sustainable once the axiom of reals is abandoned.\(^6\)

Once money is linked to banks via a debt creation–debt payment process in calendar time the question needs to be addressed as to what determines whether debt payment commitments will be met and what are the consequences of such commitments not being met. Keynes carried the argument up to but not through this point. In his chapter on the trade cycle in The General Theory (chapter 22) the primary cause of the crisis – which he identifies with the transition from expansion to contraction – is a collapse of the marginal efficiency of capital. But the gross profits of business depend not upon the ‘productivity’ of capital in any technical sense, but upon the amount of investment. The profitability of existing capital – and profit expectations from investment – can only decline if investment and expected investment decline. Thus we have to look elsewhere – to arguments other than those derived from assumed properties of production functions and hand waves with regard to over-investment – to explain why the marginal efficiency of
it accumulates increases the liquidity of the private economy. As a result the capitalization rate on the sustained profits does not collapse. Once the financial structure of a modern economy with big government and an interventionist central bank is made integral to the processes of the economy, the explanation of the contained recessions since the mid-1960s becomes apparent. Furthermore the fact that crises have been contained to date in the post-war period does not guarantee that fully developed crises cannot occur if the financial structure evolves towards even greater fragility and policy interventions are inept.

Schumpeter had a vision of the capitalist process in which instability was a normal outgrowth of a combination of entrepreneurial activity and accumulation. The entrepreneurial activity led to the sustaining of profits even as accumulation led to the using up of profit opportunities. He also recognized that a banking system, i.e. a set of institutions that were not dependent upon prior savings in order to finance investment, was necessary. In Schumpeter's early vision banking was a full partner in the development process. He did not do more with his dynamic vision than state it. Even though aggregate profits reflected aggregate externally financed spending, he never was able to tie it down to broader relations in which banks' financing of government yielded profits to business. Furthermore Schumpeter got enmeshed in a Walrasian trap that assumed only real things matter, whereas in his original vision money mattered.

Fortunately for the development of economics, Keynes never was a Walrasian. His Marshallian roots were too strong. However he never did state his theory in fully intertemporal manner; his reliance on functional relations that could be forced into the simultaneous equilibrium among a number of markets led to the loss of insights. Only as problems of comprehensive debt validation arose in the mid-1960s did it become evident that the simultaneous market-clearing approach had missed the most significant dimensions of Keynes' theory.

The task confronting economics today may be characterized as a need to integrate Schumpeter's vision of a resilient intertemporal capitalist process with Keynes' hard insights into the fragility introduced into the capitalist accumulation process by some inescapable properties of capitalist financial structures. The 'fact' that intervention has prevented the fragility of finance from leading to a great depression in recent years may point the way to an integrated market economy in which the development of fragile financial structures is contained by an organization of industry that emphasizes competitive private enterprises for the mass of small and modest industries and firms alongside a comprehensive socialization of the liability structures of those firms and industries that use exceptionally expensive large-scale capital assets. Perhaps a lesson that the practical men and scholars can learn from the teaching of Keynes and Schumpeter is that a mixed economy, which has socialized sectors side by side with the aggressive private firms, works better in
terms of stability and growth than either a comprehensive socialism or a laissez-faire capitalism.

Notes

1 In a letter to R.H. Brand of 29 November 1934 Keynes (1982: XXI, 344) wrote: 'I am afraid there is nothing which I can yet refer you to which deals with the problem of demand along my lines. I am working hard at my new book, but it may be nearly another twelve months before it comes out. When it appears, it will be on extremely academic lines; since I feel, rather definitely, that my object must first of all be to try and convince my economic colleagues. I have, indeed, succeeded in convincing those at Cambridge whom I have seriously tackled with them so far. If I prove right, a good many fundamental matters of theory will be seen in rather a new light.'

2 The orthodox propositions 5 and 6 according to Keynes (1973: XIV, 103–4) are:

5. The marginal efficiency of money in terms of itself is independent of its quantity. This according to Keynes is a 'consequence of the quantity theory of money' and of the assumption - as became clear in later discussions with Robertson et al. - of the orthodox theory that productivity and profit (i.e. 'real world concerns') determine money interest rates.

6. 'The scale of investment will not reach its equilibrium level until the point is reached at which the elasticity of supply of output as a whole has fallen to zero.'

3 It is to be noted that the version printed in the Collected Works first appeared in the magazine Vanity Fair in January 1932.

4 Incidentally this essay by Kalecki first appeared in 1942.

5 The full statement of the Kalecki profit relations allows for savings out of wages, consumption out of profits, foreign trade and government budget surpluses or deficits. This provides a framework for an effective understanding of how a capitalist economy whose behaviour depends upon realized and expected profits operates. See Minsky 1982a: chapter 5; and Minsky 1983.

6 Although Frank Hahn is a theorist who sees no way to abandon the 'axiom of reals' his remarks on neutrality of inflation are germane. See Hahn 1983: chapter III.

7 As this paper was being processed three items that integrate financial relations with behaviour and decisions arrived in the mail. These are: McKeon and Blitz (1983), Giordano (1983) and Bernstein (1983). Post-Keynesian analysis is alive and well among perceptive commentators on Wall Street, although the Wall Street commentators are not necessarily Post-Keynesians in their theory!