

Monetary and Real Factors Affecting Economic Stability

A Critique of Certain Tendencies in Modern Economic Theory (*)

1. - Introduction.

It is the conclusion of the present paper that a large part of contemporary economic theory has laid undue stress on « real » factors and that « monetary » factors and the closely related phenomena of institutional price and wage rigidities have been neglected or their importance grossly underestimated. Instability in general economic activity as well as in the external balances of payments are explained in terms of physical rigidities, fixed coefficients of production, stubborn inelasticities of demand and supply instead of being attributed to faulty monetary arrangements and policies, to price and wage rigidities and similar factors.

2. - The Meaning of Instability.

Let me explain first what I mean by instability. I define it as fluctuations in aggregate output and employment. However, even with stable aggregate output and employment, price instability is possible in the sense of changes in relative prices as well as of the price level (in any one of the possible meanings of this ambiguous term). Price instability introduces instability in the income distribution which may well present very serious social and economic problems. Sharp changes in the terms of foreign trade, which are an especially serious matter for highly specialized primary producing countries, are an example

on the international level. But there can be no doubt that in most cases violent changes in the terms of trade between large segments of the economy on the national or international level are the consequences or concomitants of fluctuations in aggregate output and employment in the industrial countries.

For this reason I shall concentrate in this paper on the short run fluctuations — the business cycle in the industrially developed countries.

In the « underdeveloped » countries economic instability is to a very large extent either the reflection of the business cycle in the industrial world or the consequence of autonomous inflationary policies. Much has been made of changes in demand, technology and import policies of the industrial countries which may destabilize the external balances of highly specialized primary producing countries. Without wishing entirely to discount the importance of these factors, I venture to say, however, that from a global standpoint such sources of instability are of minor importance compared with the business cycle and inflation.

Inflation, to which I shall return briefly later in my paper, is by no means an unimportant matter. On the contrary, I am convinced that long run (continuous or intermittent) inflation not only introduces price instability but is also a factor seriously retarding economic growth. But intellectually the problem of rapid secular inflation (1) is much

(*) The present article is an abridged and slightly altered version of a paper read at the *First Congress of the International Economic Association* held in Rome, 6-11 Sept. 1956. The full text will be published in the proceedings of the Congress by Macmillan, London, 1957.

(1) The slow, « creeping » kind of inflation which is now going on in many developed countries is again a more insidious process, much harder to diagnose and to evaluate than the rapid, open inflation from which many underdeveloped countries suffer.

less challenging than the problem of the business cycle to which I turn my attention now.

Business cycles I take in the sense in which the term is used by the National Bureau of Economic Research — that is ups and downs in aggregate activity, more precisely in aggregate output and employment, changes in output due to changes in employment (2). (Output can, of course, change without changes in employment — harvest changes being the most important example. But the short run changes in aggregate output that constitute the business cycle are clearly not of that nature — which does not, however, exclude that crop changes as well as other exogenous disturbances may have great causal significance for the cycle).

I follow Mitchell and Burns in defining the cycle as the shortest observable fluctuations in activity. In their words, « business cycles vary from more than one year to ten or twelve years and are not divisible into shorter cycles of similar character with amplitudes approximating their own » (3). Furthermore, I make no attempt at finding a regular sequence or pattern of « minor » and « major » cycles (as Hansen thinks there exists). Cycles do, of course, differ greatly in duration and enormously in amplitude; some depressions are mild, others severe; some upswings strong, others weak and abortive (4). But the most careful investigations in *Measuring Business Cycles* have convinced me that no regular and persistent pattern exists or at any rate has yet been discovered; that it is not possible to interpret the succession of cycles of different length and amplitude as resulting from the superimposition of independent or interde-

(2) In identifying fluctuations in activity with fluctuations in aggregate output and employment, I deviate somewhat from the great masters of the National Bureau. The deviation is, however, slight because their cyclical chronology for « activity » is almost perfectly matched by the cyclical chronology in aggregate output and employment series.

(3) See BURNS and MITCHELL, *Measuring Business Cycles*, p. 3. Seasonal fluctuations are not of « similar character ».

(4) This makes me doubt the usefulness of the averaging procedure adopted by N.B.E.R. even with all the caution and reservations expressed by the illustrious authors of *Measuring Business Cycles*.

pendent cycles of different length (Schumpeter's three cycle schema); that it is even less defensible to assign different quasi-independent cyclical mechanisms to the different superimposed cycles. Each cycle or depression is, in a sense, an historically unique case; that is to say it is the joint product of endogenous and exogenous forces. The result of the interaction between the cyclical mechanism and the historical environment and external disturbances is a complicated chemical compound and not a mechanical mixture whose constituent parts are separable by more or less mechanical statistical devices. The statistical decomposition of time series in cycles and trend is an insoluble problem (5). But this does by no means exclude that it is often possible to explain particular cycles or phases (depressions or expansions) in terms of exogenous forces or endogenous processes or to point to strongly intensifying or mitigating factors which explain the mildness or severity of a particular depression, or weakness or strength of a particular upswing. Let me mention only one or two examples — more will follow later. The intensification of the boom following the outbreak of the war in Korea does not require any further explanation than reference to the wave of Governmental and private spending engendered by the war (6). The great depression of the 1930's

(5) It is perhaps more correct to say that the problem is meaningless, at least in the sense in which it is — or rather *was*, for it is no longer a very live issue — usually formulated. The question is usually framed as a causal one: How to separate the effects of the causes responsible for the cycle from the effects of the causes responsible for the trend. The further assumption is made that the two sets of effects are additive. This assumption is surely unwarranted. The causes making for cyclical fluctuations, when impinging on a growing system, will produce very different results than they would produce in a stationary system. And similarly the growth factors would produce different results in an economic system that, unlike the one we live in, is not subject to cyclical fluctuations. As a consequence, if we could make the experiment of abstracting from the actual system which is subject to the joint operation of both sets of causes, first those that make for cycles, and second those that make for trend, the sum of the two effects would not be equal to, but would probably greatly exceed the total observed change.

(6) It should be observed, however, that in the U.S. the lower turning point following the mild recession of 1948-49

in the U.S., whatever its deeper causes, was undoubtedly tremendously intensified by the collapse of the banking system.

It is disturbing that economists do not see eye to eye on all these matters. But we can take consolation in the fact that despite great divergences in the interpretation and explanation, different writers agree about the dates of cyclical turning points and about certain basic characteristics of the short cycle. For example, cyclical chronologies established independently by the most careful investigations of the N.B.E.R., by Edwin Frickey's painstaking researches (7), and by Schumpeter's more impressionistic methods agree almost entirely. (Divergences in the dates for turning points of a few months are hardly surprising and serious in view of the complexity of the underlying data).

While the contours of the short run business cycle are, thus, fairly clear and generally accepted — further characteristics which throw light on the role of money in its causation will be discussed presently — the long « waves » which go under the name of Kondratieff cycles, secondary or trend cycles, are a much more hazy thing. They find their expression mainly in wholesale prices and interest rates. But the chronology varies considerably from writer to writer and from country to country; and it is not quite clear whether the ups and downs in prices are always associated — as they invariably are in the short cycle — with ups and downs in output and employment.

It is better not to identify the problem of long run stability with a hypothetical long cycle — a phrase which suggests an endogenous mechanism and a degree of regularity that simply do not exist. We should rather think of the occurrence or recurrence at irregular intervals of rising or falling price

had occurred already in the middle of 1949. The war in Korea was therefore not necessary to pull the American economy out of a depression, but was superimposed on an upswing that had started independently.

(7) EDWIN FRICKEY, *Economic Fluctuations in the United States*, Cambridge, Mass., 1942.

trends stretching over several short cycles which may or may not be associated with similar trends in real output.

3. - A Striking Characteristic of the Short Cycle.

One of the most striking and revealing characteristics of the short cycle is that the ups and downs in output and employment are closely correlated with ups and downs in price levels. *A fortiori* fluctuations in *real* magnitudes (output, employment, real income) are paralleled by fluctuations in *money* flows (money income, money value of output). It should be noted that this does not follow from our definition of the cycle which runs in *real* terms. Conceivably, prices as well as money values could be uncorrelated or negatively correlated with fluctuations in real output.

It seems to me that this actual, almost (8) perfect parallelism cannot be a chance phenomenon. In fact, an increasing number of business cycle analysts explicitly or implicitly agree that the *proximate* cause of fluctuations in output and employment is fluctuations in aggregate expenditure or effective demand. To be sure there is plenty of disagreement on the deeper forces and processes that are responsible for the cyclical fluctuations in aggregate expenditure. It is nevertheless highly significant that very diverse theories agree on the role of expenditure fluctuations. To this group belong not only the various types of monetary theories of the cycle, but also all the modern « capital stock adjustment theories » which rely on some sort of interaction of multiplier and acceleration principle

(8) I say « almost perfect » because there are sometimes shortlived deviations at the turning points between the movement of prices on the one hand and that of real activity on the other. But note that even if the timing between prices and real volume is not perfect, it is still possible (and probably the case) that money flows (price times quantities) are perfectly correlated with volumes.

For the hypothetical long cycle the parallelism is certainly much less close. This surely is a reflection of the fact that in the long run price and wage flexibility is much greater than in the short run.

to construct an endogenous oscillating mechanism and even Schumpeter's theory, whose logical structure is entirely different, belongs to this group. All these theories explain in different ways why expenditures fluctuate in cycles; it is then easy to see how this produces cycles in output and employment — so easy indeed that the necessary assumption of some sort of price and wage rigidity is rarely made clear. Let me add that a very large part of currently employed methods of forecasting the future course of business consists of attempts to form a judgment on the probable course of various segments of the expenditure stream — business spending on investment (plant and equipment, inventories), consumer spending, Government spending, foreign demand, etc.

The proposition that fluctuations in aggregate effective demand or expenditure are the proximate cause of the business cycle does by no means imply that it is always monetary factors in the sense of active measures of monetary policy on the part of the monetary authorities or of the banks that bring about the fluctuations in expenditures. The line of causation does not necessarily always run from the monetary to the real factors, although it can hardly be doubted, in my opinion, that monetary factors do often greatly contribute to cyclical instability and that, on the other hand, skilful monetary policy can help to counteract instability caused by « real » factors (9). Suppose our economic system were not subject to cyclical fluctuations; it would then be an easy task to produce by monetary measures a business cycle with all the familiar features of alternating periods of expansion and contraction in output and employment

(9) Hardly anybody doubts this anymore. In that respect the situation is different from what it was at the time of the outbreak of the Great Depression. But let me add that this remark does not imply the endorsement of a naive version of « functional finance ». However the criticism of the latter (see especially the forceful and convincing strictures by Milton Friedman) is based on the realization of the difficulties in diagnosis and timing of policies owing to lags and uncertainties and not on a denial of the basic proposition that correctly timed and properly dosed injections of money can counteract (although not always completely compensate) fluctuations in aggregate real activity.

associated with ups and downs in prices and aggregate demand. All that is required to bring about such a result would be to expand and contract credit or to produce sufficiently large surpluses and deficits in the Government budget.

4. - Real and Monetary Factors Behind the Fluctuations in Aggregate Expenditure.

In order to gain perspective let me briefly enumerate and survey various possibilities of explaining cyclical fluctuations in aggregate spending by « monetary » and « real » factors and their interaction — starting from cases of « purely monetary » causation and proceeding to cases of increasing preponderance of « real » factors.

At the one extreme we have the purely monetary explanations of the cycle which assume that the real economic system is inherently stable and that instability is introduced by misbehavior or mismanagement of money. (It should be remembered that what may be purely monetary is the causal mechanism; the thing to be explained, the cycle, we have defined in real terms).

Of modern writers who have proposed purely monetary explanations, Irving Fisher and R. G. Hawtrey come at once to mind. Fisher flatly denied that there was such a thing as a cycle except to the extent that quasicyclical instability was introduced by monetary instability which he conceived in terms of changes in the purchasing power of money. Professeur Hawtrey's endogenous theory, consisting of a dynamic mechanism of lagged interactions of monetary circulation, cash drains, and credit policy of the banks, changes in short term interest rates inducing changes in inventory investment is well known (10).

Another school that explains the cycle by monetary factors starts from Wicksell's distinction between the market or money rate

(10) It seems safe to say that his theory would have made a greater impression if it had been worked out in mathematical form.

of interest, on the one hand, and the natural or equilibrium rate on the other. Wicksell himself did not hold a purely monetary theory of the cycle, but Mises and Hayek, to mention only two, did. They believe that the initiating cause of the cycle can always be found on the monetary side, on the supply side of money. Excessive supply of credit (that is to say, credit creation in excess of « voluntary savings » — the precise criterion of excessiveness not being always the same) depresses the market or money rate of interest below its equilibrium level; this starts a Wicksellian cumulative process which necessarily ends in crisis and depression.

In these monetary theories, which stress changes in the supply side of money, it is assumed explicitly or tacitly that the demand for money and credit, or to put it differently, the natural or equilibrium rate of interest is determined by the (physical) marginal productivity of capital which is fairly stable over time, although perhaps subject to a gradual downward shift as the capital stock increases.

Non-monetary factors make their appearance as soon as it is realized that the demand for money and credit (or the equilibrium rate of interest) is neither stable nor determined solely by the physical productivity of capital.

The main factors making for instability of investment demand, or in the terminology of the Wicksellian School, for changes in the equilibrium rate of interest (if we still permit ourselves under these circumstances to think of an equilibrium rate existing at any given moment) are as follows, arranged in the approximate order of increasing « physicalness »: « psychology », i.e. waves of optimism and pessimism; investment changes induced by changes in income or consumption as postulated in the different variants of the acceleration principle (including that of Kaldor); inventions and innovations and the forces giving rise to the « bunching » of innovative investment as described by Schumpeter; « lumpiness » of investment due to the durability and indivisibility of capital instruments together with the asymmetry in the operation

of the accelerator, the replacement waves and « echo effects » which follow from the fact that capital goods are durable; speaking of bunching and lumpiness of capital investment we cannot forget in the world in which we live the most powerful external factor causing intense concentration (and hence instability) of investment, namely, wars and preparation for wars.

All these factors have been used, singly or in combination, to explain the business cycle. But in all these theories, although they are no longer purely monetary, monetary factors enter more or less importantly — and not only in the trivial sense that everything that happens in a money economy (as distinguished from barter) wears a monetary garb.

The theories which use the various « building blocks » just mentioned vary greatly not only in content but also as to the degree of formal refinement.

Let me first say a word on the latter aspect. The earlier theories have relied on verbal analysis and rough estimates of magnitudes. Since the pioneering article of Frisch, « Propagation Problems and Impulse Problems in Dynamic Economics » (11), Lundberg's celebrated *Studies in the Theory of Economic Expansion*, and especially since the formal marriage of multiplier and acceleration principle (who earlier lived together under different names in illdefined relationship), a great change has come over business cycle theorizing. The theory has been formalized in complete endogenous sequence models using difference and differential equations. The earlier models were linear but soon non-linear models with « floors », « ceilings », « asymmetries », « stochastic variables », and « exogenous shocks » were added. Not only mathematical blueprints but full-blown econometric models relating to individual countries or even to the whole world with constants and parameters statistically evaluated are pour-

(11) *Economic Essays in Honour of Gustav Cassel*, London, 1933.

ing from single scholars' studies and statistical laboratories like automobiles from the assembly line.

This surely is a very interesting development and this type of approach is undoubtedly worth trying and perfecting. But there can be hardly a doubt any more that so far the results have been most disappointing. The multiplicity of more or less inconsistent models, many of them based on broadly plausible assumptions and, if of the econometric type, fitting the data from which they are derived fairly well, but none of them standing up to the test of extrapolation beyond the period from which the data were taken — this is a spectacle that is not calculated to inspire confidence.

But let me return to the substantive question concerning the role of monetary forces in the cycle. It would seem to be a valid generalization that purely monetary explanations have become increasingly unpopular and although most current theories are mixed in the sense that monetary and real factors interact, the monetary factor has been more and more deemphasized and relegated to a merely passive or permissive role.

Let me consider, as an example, Hicks' classic *Contribution to the Theory of the Trade Cycle* — the most elegant and most carefully elaborated specimen of a great variety of similar systems.

His principal model runs almost entirely in « real » terms: Consumption expenditure is a function of *real* income; investment a function of the rate of change in *real* income; there is a physical ceiling which may or may not be hit and, owing to the *physical* impossibility of using up durable capital faster than it wears out, the accelerator is weaker on the downgrade than on the upgrade. Wages are supposed to be perfectly rigid and so are prices (with minor qualifications).

In the basic model money plays a purely passive role; monetary circulation automatically expands during the upswing and automatically contracts during the downswing af-

the cycle (12). Money is a mere veil or rather a tricot (as Mises used put it (13) which faithfully reflects without distortion the contours of the economic body and all its changes.

Although Hicks regards the « real » model as the heart of his theory and the latter as an adequate picture of reality, he is too much of a realist to rely entirely on the « real » part of his theory for the explanation of actual cyclical experience. In the last two chapters of his book he introduces the « monetary factors » as a very active element and thus modifies his theory more drastically than appears on the surface or than he himself seems to admit. But let me spend a few more minutes on the « real » models.

Although in these models money plays no active role in the sense that no deliberate inflationary measures, or rising prices, falling interest rates or lowered credit standards are required to explain a cyclical upswing — nor the opposite of all this to account for the depression phase — money is nevertheless essential because the upswing could not proceed unless the supply of money were elastic in the sense that either *M* or *V* increased without sharp rises in the interest rates (14). If there is not sufficient scope for *V* to expand the monetary authorities must permit the necessary expansion in *M*; if *V* can expand it is sufficient that they refrain from counteracting the increase in *V* by contracting *M*.

The downturn is brought about entirely

(12) Monetary complications are, however, invoked to explain one feature of actual cyclical experience which in Hicks' opinion cannot be accounted for by his « real » model. He thinks that after the downturn the contraction of output usually proceeds faster than the multiplier-acceleration mechanism would lead one to expect. So he introduces as an intensifier what Pigou many years ago (in his *Industrial Fluctuations*, 1926, which to this day has kept remarkably fresh) called the detonation of bankruptcies and business failures into which the upswing explodes. For this concession to realism Hicks was promptly rebuked by Kaldor who believes that also this particular feature of the cycle can be explained by the « real » mechanism.

(13) Needless to say Mises did not accept the view that money was a mere tricot.

(14) It is true there has been a strong tendency to discount the importance of the interest rate but it has hardly gone so far as to deny that sharply rising interest rates would act as a brake on the expansion.

by the « real » mechanism and during the downswing the role of money is even less important than in the upswing; for while the monetary authorities can always stop or slow down an expansion they can do nothing or very little to soften a contraction (although they could presumably intensify it). When the « real » forces « decree a contraction », *MV* shrinks inexorably and if monetary policy prevents *M* from shrinking (or expands it) the result is simply an offsetting drop in *V*.

There can be hardly a doubt that this account greatly underestimates the importance of monetary factors in producing the major cyclical swings of actual experience. What is open to question is the degree of distortion of the true picture. While I realize that many of those who have put forward real models of the cycle would be ready to admit that their picture of the cycle is liable to be changed somewhat by the operation of monetary factors, I still believe that modern theory has tended grossly to underestimate the importance of the monetary factors. Not only in the field of business cycles, but in other areas as well alleged stubborn « structural » and « real » instabilities and impediments to necessary adjustment have been overemphasized and overestimated at the expense of monetary factors and the closely related element of price and wage rigidity. This is a matter of great importance which has far-reaching policy implications (15).

5. - Monetary Factors In Depressions.

The operation of monetary forces is especially conspicuous in depressions. But the seeds of depression are sown during the boom and they are not entirely of « real » origin.

Let me enumerate a few instances in which monetary factors have notoriously greatly intensified depressions although perhaps not brought them about.

(15) Thus it was necessary to « rediscover monetary policy ». See Prof. Ellis' celebrated article « The Rediscovery of Money ». The same felicitous phrase was used independently by Prof. M. A. Heilperin.

The Great Depression of the 1930's in the U.S. was made much more severe than it would otherwise have been by the wholesale destruction, through bankruptcies, of banks and bank money. It is surely not an essential feature of the real cycle that the banking system should collapse during the depression. The same thing happened in several other countries and the breakdown of the gold standard, the liquidation of the gold exchange standard, and the international scramble for liquidity is essentially the same monetary process on the international level.

It is gratifying to see a prominent champion of the « real » cycle theory like Professor Hicks himself emphatically stressing the basically monetary nature of the Great Depression thereby flatly rejecting « real » explanations of the events of the 1930's, his multiplier-acceleration theory, as well as the « secular stagnation » thesis.

Let me quote the relevant passage hidden away in a footnote:

« I do not see that there is any adequate reason to suppose that the *real* boom of 1927-9 was at all an exceptional boom; if the accelerator mechanism, and nothing else, had been at work, it should not have been followed by an exceptional slump. But the slump impinged upon a monetary situation which was quite exceptionally unstable. The main cause of this instability was not the purely superficial speculative over-expansion which had occurred in New York in 1928-9; its roots went much further back. The monetary system of the world had never adjusted itself at all fully to the change in the level of money incomes which took place during and after the war of 1914-18; it was trying to manage with a gold supply, which was in terms of wage-units extremely inadequate. Difficulties in the postwar adjustment of exchange rates (combined with the vast changes which the war had produced in the creditor-debtor position of important countries) had caused the consequential weakness to be particularly concentrated in certain places; particular central banks, as for instance the Bank of England and the Reichsbank, were therefore particularly incapable of performing their usual function as "lenders of last resort." » (16).

(16) *Loc. cit.*, p. 163. This explanation does not quite fit the American case. It cannot well be said that the monetary (gold) base of the U.S. economy was too narrow even though

This explanation of the Great Slump has long been propounded by continental European economists, notably by the late Charles Rist, but has not found many supporters among Anglo-American economists.

Two general observations are called for. First, it should be stressed that price rigidity, which is in practice primarily wage rigidity, is an essential prerequisite of any monetary explanation. This remark must, however, not be interpreted to mean that everything would be put right and cyclical instability could be banished by introducing wage flexibility. The problem is much more complicated, because of the existence of fixed contracts and possible adverse dynamic and expectational repercussions of a perfectly flexible wage and price system.

Second, it is well known that throughout the 19th century the British monetary system operated on a very narrow gold reserve. This narrowness of the monetary base made for a jerky credit policy, because it forced the Bank of England to react sharply to slight cash drains. Thus it contributed to monetary instability throughout the 19th century (17). The growing wage rigidity in the 20th century made that system unworkable.

It is well known, although often forgotten, that monetary mismanagement, namely, the revaluation of sterling after the first world war, without the necessary wage adjustments, was responsible for the semi-stagnation of the British Economy during the 1920's (18).

the dollar was later devalued in terms of gold. The speculative orgies of the late 1920's were not as superficial as Hicks thinks; they surely contributed much to the collapse of the banking system.

(17) On all this and for references to the contemporary literature see especially VINNER, *Studies in the Theory of International Trade*, chapter V.

(18) This outcome was correctly foretold by KEYNES in his pamphlet *The Economic Consequences of Mr. Churchill*, 1925.

As Prof. HAYEK has pointed out (*Monetary Nationalism and International Stability*, London, 1937, p. 44) Keynes' warning was based on orthodox teaching. A hundred years ago (1821) Ricardo in a letter to Wheatley said, « I never should advise a government to restore a currency, which was depreciated 30%, to par; I should recommend... that the currency should be fixed at the depreciated value ». (Ricardo, *Sraffa* edition, Vol. IX, p. 73). Under 20th century conditions of

The Great Depression of the 1870's offers many parallels with that of the 1930's. It too was greatly intensified by monetary factors, both in the U.S. and in Europe. In the U.S. large budget surpluses followed the deficits during the Civil War and the premium on gold was gradually reduced from 57 percent in 1865 to zero in 1879 (19), the terminal year of the depression — a situation which in many respects resembles the British position in the 1920's. True, the general economic background — 19th century U.S. vs. 20th century Britain — is entirely different, but the difference in the surrounding conditions makes the similarity of the outcome all the more remarkable and serves to support the hypothesis that the monetary factors were in both cases of decisive importance.

These are conspicuous and notorious cases in which depressions have been intensified by monetary factors. Similar though less conspicuous and serious monetary disturbances entailing credit contraction, pessimistic expectations and inducement to increase liquidity (reduction in V) can be found in practically every but the mildest depression.

6. - Monetary Factors During Business Cycle Upswings.

While it is, thus, easy to point to instances in which depressions have been greatly intensified by monetary factors and policies during the depression and while, following Pigou and Hicks, we may venture the generalization that in many less conspicuous cases than those mentioned the severity of depressions has been enhanced by monetary repercussions of financial crises, the role of monetary factors in the upswing and boom phase of the cycle is much more controversial and difficult to assess.

I take it that hardly anyone would defend

wage rigidity, most economists would say that a 10% overvaluation is too much to be dealt with by deflation rather than by devaluation of the currency.

(19) See R. FELS, « American Business Cycles 1865-79 », in *American Economic Review*, June 1951, pp. 325-349.

nowadays the proposition, and I certainly would not do so myself, that the tapering-off of the upswing and the subsequent depression could be avoided either by keeping M, or MV (in some sense) or some general price level constant. Hence the failure of money or monetary policy to conform to any simple rule cannot be held responsible for the fact that booms do not last forever and are always followed by depressions. But from the fact that it is difficult or impossible to discover a monetary rule which, if observed during the upswing, would guarantee perpetual prosperity, it does not follow that the behavior of money or monetary policy during the upswing cannot greatly contribute to the severity of the following contraction.

The length and severity of depressions depend partly on the magnitude of the « real » maladjustment which developed during the preceding boom and partly on the aggravating monetary and credit factors already mentioned — the scramble for liquidity by financial institutions as well as by others, destruction of bank money by bank failures, and similar events on the international level.

While monetary arrangements and policies during the upswing probably cannot entirely prevent the emergence of real maladjustments — except perhaps by preventing the upswing itself — imprudent monetary policies surely can aggravate them; moreover, the financial crises which frequently mark the downturn of the cycle and the monetary and financial complications during the depression are partly the consequence of monetary forces and policies operating during the preceding expansion.

The term « real maladjustment » must not be interpreted in a narrow, exclusive sense (20). There are alternative types of such maladjustments and I do not wish to

(20) In the economic literature it is closely associated with F. A. Hayek's theory of the cycle. However, the « real maladjustment » which Hayek describes, « over extension of the period of production » (the concept is not easy to define in operational terms) is only one kind of maladjustment out of a multitude of possibilities, and not the most likely or most easily ascertainable one.

suggest that there is a presumption that every boom breeds the same kind of trouble. Let me mention only two or three types.

The Harrod-Hicks theory (envisaged also by other writers) that when an expansion runs head on into a full employment ceiling (which need not be a rigid barrier but may be a flexible bottleneck zone) induced investments will collapse (21), describes one kind of real maladjustment.

Another type of maladjustment is the one described by Schumpeter. It can be characterized as a temporary exhaustion of investment opportunities in the particular area in which the boom was concentrated. The chances that there should be a *general* and *chronic* dearth of investment outlets for current savings (as distinguished from a temporary one in a particular area) are so remote and *sub specie historiae* so far-fetched that we can ignore them (22).

While these real maladjustments are closely tied up with growth and expansion itself and are most difficult to diagnose and to avoid (except by preventing the expansion itself) most upswings are characterized in varying degrees by excesses which at least *postfestum* appear unnecessary, undesirable and avoidable, even though the line which separates them from the maladjustments mentioned earlier cannot always be drawn neatly at the time when things are going well.

What I mean are speculative excesses in the real as well as in the financial sphere: overop-

(21) In other words, « capital widening » comes to an end and since « capital deepening » cannot quickly take up the slack, aggregate investment is bound to fall and a depression ensues.

(22) This does not, however, alter the fact that in every severe depression we experience a revival in lay and expert circles alike of the theory that most if not all depressions are the consequence of a chronic lack of investment opportunities — only to be given up during the following upswing and replaced in the minds of many by the opposite point of view to the effect that we have at last conquered the business cycle and entered the « new » era of perpetual prosperity. This illustrates the « Konjunkturgebundenheit » of economic thinking and can be claimed as supporting evidence by those economists who stress the importance of the « psychological » factor in the generation of the business cycle. In recent years Prof. W. A. Jöhr has dwelt upon the « psychological factor » in his monumental volume on Business Cycles.

timistic overproduction in particular lines of industry and overbuilding, speculative land booms and speculative overinvestment in inventories (23), and in the financial sphere, excessive speculation on the stock exchanges.

It is mainly in this area that money and monetary policy become important during the upswing. These « unhealthy » developments are not possible, or at least not possible on the large and disturbing scale on which they actually occur, without excessive credit expansion. It is, of course, often difficult to diagnose such developments when they occur and a most difficult task of monetary policy to prevent inflationary excesses without endangering expansion itself; no easy rule such as stabilizing some general price level will be sufficient. It is nevertheless a fact, I believe, that these things do happen in every major upswing and that they breed financial upheavals and revulsions which then greatly contribute to the severity of the succeeding deflation and depression.

7. - The Comparative Importance of Monetary and Real Factors in the Cycle.

My general conclusion is that monetary factors and policies play an important role in generating economic instability. A large part of modern cycle theory has unduly neglected monetary factors and overplayed the « real » factors, although most proponents of « real » theories of the cycle find it necessary to bring in monetary factors as modifying elements at some stage before applying their theories to the cycle of the real world.

Let me now raise the quantitative question: Suppose the various destabilizing monetary complications which I have enumerated could be avoided by institutional reforms and skilful

(23) I suspect that the « non-speculative » inventory cycle based on a multiplier acceleration mechanism (analyzed in masterly fashion in Metzler's celebrated articles) is only a small part of the real story and that inventory cycles without price speculation and monetary stimuli (elements which play no part in Metzler's theory) would be mild and uninteresting affairs.

monetary policy; would that damp down the cycle drastically or would it not make much difference? In other words, is the « real » cycle without the so-called « complications » really a very serious problem?

This is, of course, an extremely complicated question. I cannot hope in the course of one lecture to formulate it with all the care and precision which it requires, let alone to give a well-documented answer.

But let me make bold and suggest tentative answers to some subdivisions of the main query.

If the wholesale destruction of bank money during depressions through bank failures, runs on banks, lack of confidence in the financial institutions as well as analogous phenomena in the international sphere could be avoided — a modest minimum program of monetary reform — catastrophic slumps as in the 1930's would be eliminated. Avoidance of mistakes such as in the revaluation of the Pound after the first world war and a modest policy of monetary expansion (I am speaking now of monetary policy, not of fiscal policy, i.e. the creation of counter cyclical budget deficit in a depression) would make prolonged periods of semi-stagnation like that of the British economy in the 1920's extremely unlikely.

If, in addition to this, inflationary and speculative excesses during cyclical expansions were prevented and a mild counter cyclical budget policy adopted, cyclical instability would be damped down to moderate proportions. In other words, the « real » cycle without the monetary « complications » (comprehensively defined) is, in my judgment, a rather mild affair.

What are the chances that the « monetary complications » will in fact be avoided henceforth? I think that a majority of economists would agree that the chances are good as far as anti-depression policy is concerned. Run-away deflation, like in the 1930's, is, I believe, out of the question everywhere, even in the most capitalistic countries. More than that, as far as anti-depression policy is concerned,

there is certainly more danger in most countries of too soon and too much rather than of too late and too little. Does that mean that we have reached the millenium of economic stability? Now, as far as employment is concerned, there is probably little chance anywhere of prolonged mass unemployment due to a deficiency of effective demand. True, this does not exclude unemployment due to a lack of cooperating factors. But dislocations where that happens on a large scale are exceedingly rare (24).

8. - Secular Inflation.

But for other dimensions of economic stability than employment, for example, for price stability, the outlook is definitely not so good. The low tolerance for unemployment, the strong inclination to suspect an incipient major depression in every slight actual or imagined dip in economic activity, the high propensity to apply anti-depression measures — all that coupled with the powerful urge to invest and develop, the constant pressure of organized labor for higher wages and, in some countries, of organized agriculture for higher prices, makes for secular,

(24) Such conditions existed after the war in war-ravaged countries due to a lack of raw materials, machinery, and transportation. The spectre of that kind of unemployment arose in some countries such as in Britain during severe balance of payments crises; but it never came to pass. Some theorists have played with the idea that this kind of unemployment exists *chronically* (!) in disguised form in underdeveloped countries. It is based on the assumption of constant coefficients of production, that is to say that capital and labor can be combined only in one or two fixed proportions (rectangular or at least angular production functions). Capital is scarce, hence much labor must remain unemployed. The assumption that such conditions should exist in the long run not for particular narrowly defined industrial processes but for industry as a whole or broad subdivisions, seems to me unrealistic to the point of being preposterous. It must be pointed out, however, that this same phantastic assumption underlies the famous Harrod-Domar model of long run economic growth.

These theories constitute other extreme examples of the modern propensity to overemphasize real factors and to look for real, in this case literally physical rigidities, instead of for monetary factors, price and wage rigidities and the like (For an able criticism of the Harrod-Domar model see L. B. YEAGER, « Some Questions about Growth Economics », in *American Economic Review*, March, 1954).

intermittent or continuous, creeping or galloping inflation.

Continuous galloping inflation is found in some underdeveloped countries — Chile is perhaps the most extreme recent example. There can be no doubt that it retards growth (through lowering the allocative efficiency of the economy and discouraging saving) even if acute depressive reactions can be avoided.

In the advanced industrial countries secular inflation threatens in the form of a creeping and intermittent rise in prices. That is to say, prices rise over the long pull at an *average* rate of a few percent per annum, not steadily but in waves, periods of rapidly rising prices being interrupted by shorter periods of stable or even slightly falling prices. This is an insidious process which is not easy to diagnose and on the consequences of which there is little agreement between economists, at least so long as the average price rise is not more than, say, 2-3% a year.

I am not going to speculate about the average annual speed and time shape at which secular inflation will begin to have serious consequences. I shall instead discuss one aspect of the causal mechanism which brings about this condition and one of its consequences on the international level.

As Bronfenbrenner (25) points out, there are two different explanations of the tendency in the industrial countries of the West towards secular creeping inflation. The one school blames the pressure groups of organized labor and organized agriculture; the other blames monetary policy which has become lax under the influence of the Keynesian thinking of our time. According to the first, the price level is gradually pushed up by rising wages; according to the other view, it is pulled up by monetary policy.

Money plays, of course, its role in both schemes. Labor unions could not push the price level up unless monetary policy gave way. It should also be observed that it is

(25) « Some Neglected Implications of Secular Inflation », in *Post-Keynesian Economics* (1954).

not necessary that labor be organized in one huge bloc (as it actually is in some countries) and force up the whole wage level in one big push. For the inflationary mechanism to work, it is a sufficient condition that big chunks of wages be forced up here and there by some of the large unions. The forces of competition and actions of other unions can then be relied upon rapidly to generalize these increases. Pull and push always interact once the upward movement has started. Thus the difference between the two schools seems to degenerate into one of the hen and egg variety.

But there remains an important operational difference. Although both schools agree that despite union pressure on wages the price level could be held, if monetary policy stood firm (as it had to under the gold standard), the pressure group school asserts (or implies) that if monetary policy does stand firm, wages (or some wages) will be pushed up anyway. As a consequence unemployment will appear and monetary authorities are then confronted with the dilemma either to « create » a certain amount of unemployment or to tolerate at least from time to time a rise in the price level.

The other school takes a more optimistic position. According to them there is no such dilemma. If the monetary authorities stand firm wages will not rise or will rise only a little. A small amount of unemployment or the mere threat of unemployment will sufficiently persuade the unions to desist from wage demands in excess of the gradual increase in over-all labor productivity.

Given the fact that the tolerance for unemployment in our time is low, the difference of opinion between the two schools thus reduces to one's estimate of the power and policy of labor unions and employer reactions. Obviously much depends also on public opinion and government policy.

I am inclined to side on this issue with the pessimists (26). But this is certainly a

(26) Bronfenbrenner too (*op. cit.*) is on the pessimistic side and so is the Dean of American « labor economists », S. H. Slichter. The optimistic view is represented by members of the

question on which it would be unwise to take a dogmatic position. The power and policies of labor unions as well as the behavior of employers, reactions of public opinion and government policy differ from country to country and although the trend has been everywhere in the free world in the direction of increased union power towards a « laboristic society » (Slichter), this trend obviously depends on political and social forces whose future course cannot be foreseen. The economist has certainly no special expert qualifications for making such prophecies.

9. - Instability of the International Balance of Payments.

I now come to my last topic which dramatically illustrates the modern tendency to look for deepseated structural defects and to see stubborn real stumbling blocs to the maintenance of stable equilibrium where in reality faulty monetary policies and the rigidity of certain key prices provide a perfectly satisfactory explanation for the existing disequilibrium or instability.

While in a closed economy with a unified monetary and banking system, free mobility of funds and a fair degree of mobility of labor, a secular inflation of 2-3% per year may not have deleterious effects for quite some time, at least not clearly visible ones, in the actual world, consisting as it does of different countries with different monetary systems and policies, little or no mobility of capital funds and labor between them, even a small deviation in the rate of inflation between different countries must almost immediately lead to balance of payments disequilibrium.

What holds of differences in the degree of secular inflation is, of course, also true of deviations in timing and magnitude of cyclical

« Chicago School ». See e.g. MILTON FRIEDMAN, « Some Comments on the Significance of Labor Unions for Economic Policy » in *The Impact of the Union*, New York, 1951, and W. K. MORTON, « Trade Unionism, Full Employment, and Inflation », *American Economic Review*, March, 1950.

and other short run expansions and contractions. Analytically it is, moreover, only the other side of exactly the same problem, if the disequilibrium in the balance of payments has been caused initially by a shift in international demand (however brought about). In that case the persistence of the disequilibrium can be said to be due to the failure of the monetary mechanism to bring about an *equilibrating* divergency between the rate of expansion in the surplus country and that in the deficit country (27), while in the cases mentioned before the disequilibrium in the balance of payments was caused by the appearance of a *disequilibrating* divergence of the same sort.

But let me concentrate on the chronic case, because it illustrates most clearly the point I wish to make, namely, the contemporary propensity to overemphasize « real » factors and to neglect monetary factors and institutional rigidities.

There is to-day much more agreement than there was a few years ago on the proposition that the basic reason for the chronic (continuous or intermittent) balance of payments deficit, *alias* « Dollarshortage », from which many countries are suffering is to be found in the fact that the deficit countries have, for a variety of reasons, a higher « propensity to inflate » than the surplus countries. (It should be stressed, however, that it is grossly misleading to speak of a shortage of the U.S. Dollar only. The same shortage applies just as much to the Canadian Dollar, Mexican Peso, Venezuelan Bolivar, Swiss Franc, more recently also to the German Mark, Dutch Guilder and other currencies which are more or less freely convertible into U.S. Dollars).

The reasons for a high propensity to inflate are, of course, many. Some are of an « ideological », « political », and « social »

(27) The equilibrating mechanism can be of the gold standard type (stable exchanges, expansion in the surplus countries and contraction in the deficit countries) or it can use the technique of flexible exchanges under which no expansion and contraction in the local currency circulation is necessary. Complications caused by price and wage rigidities and consequential changes in employment or by speculative movements of capital cannot be discussed here.

nature, others are deeply rooted in the recent or more distant historical development of a country; still others are very « real ». It is, for example, easy to understand why for some time after the war it was almost impossible for war-torn and ravaged countries to restrain inflation (of the « open » or « repressed » variety); moreover, it stands to reason that countries with a low tolerance for unemployment, an elaborate social welfare establishment, exorbitant rates of direct taxation, aggressive trade unions, will constantly strain against the leash; similarly, it is not surprising at all that poor and backward countries when they wake up and set their minds to develop in a hurry and to catch up with the more developed countries, are continuously tempted to overspend their meagre resources and to live beyond their means.

With such a wealth of explanatory material available which offers unlimited opportunities for bringing into play « propensities », « asymmetries » (28), « demonstration effects » and many other gadgets dear to the heart of the economic theorist, it is difficult to understand why anyone should find it necessary to fall back on such implausible and farfetched hypotheses as the sudden appearance in the fourth decade of the 20th century of stubborn real inelasticities of international demand (of whole continents and a great variety of countries) or on the equally bizarre theory that, again beginning with the third or fourth decade of our century, balances of payments (and terms of trade) must turn inexorably in favor of the most rapidly progressing countries.

10. - Summary and Concluding Remarks.

My main conclusion is: Monetary factors comprehensively defined bear a heavy share of responsibility for short run economic instability — for the ordinary business cycle (again comprehensively defined) as well as for the

(28) See e.g. C. KINDLEBERGER, *L'asymétrie de la balance des paiements*, « Revue Economique », 1954, p. 166-89.

instability and chronic disequilibria in the balances of payments.

By « monetary factors » I do not merely mean active policies of inflation or deflation — the latter having become almost inconceivable since the Great Depression and the rise of Keynesian thinking — but also monetary repercussions of financial crises which frequently mark the upper turning point of the cycle or occur during the downswing — irrespective of whether the downturn itself can or cannot be attributed to monetary factors. For example, the collapse of the American banking system in the 1930's, the downfall of the gold standard, the ensuing sudden liquidation of the gold exchange standard, withdrawal of international credits, hot money flows and the general scramble for liquidity — all these and similar events on the national and international level are monetary factors. If these things could be avoided, catastrophes like the Great Depression would be impossible and other cycles would be mitigated.

If we define the concept « monetary factor » somewhat more comprehensively so as to include as its effects that part of existing instability which would disappear in the event that monetary policy succeeded (in addition to preventing the monetary disturbances mentioned above) in imparting a mildly anti-cyclical pattern to the supply of money and credit — monetary factors would be responsible for a still larger share in economic instability. In other words, the amplitude of the cycle would be sharply reduced if monetary factors in that comprehensive sense became inoperative (which would require, of course, acts of commission as well as of omission on the part of the monetary authorities).

This does, however, by no means imply that non-monetary factors are of no importance.

First of all, the monetary factors operate in an environment or impinge on a system which possesses certain non-monetary features that make the system respond to the monetary

forces as it does. One could easily imagine an economic system in which the monetary factors would not produce large swings in output and employment but only fluctuations in prices, which would be a much less serious matter. If, for example, deflation did not breed pessimism and inflation did not produce exaggerated optimism (29), if in addition wages and prices were flexible and there were no large fixed monetary contracts, the effects of monetary instability on aggregate output and employment would be much smaller than they are in the real world.

The « monetary » factor, the « psychological » factor and the « rigidity » factor are complementary in the strict sense of the word and reinforce each other. The resulting instability is their joint product and it is therefore quite legitimate to attribute to each of these factors a substantial share of the existing economic instability in such a way that the sum of their (alternative) shares greatly exceeds the total (30).

Second, I do not wish to discount completely — for short run purposes — fixity of capital coefficient as postulated by the acceleration principle — although even in the short run the capital-output ratio (and labor-output ratio) is not as rigid as many modern business cycle models assume (31). Nor would I ignore the multiplier. But the acceleration principle plus multiplier, unless combined with and reinforced by monetary factors, psychology and rigidities would hardly produce more than mild and inconsequential fluctuations. All these factors together bring it about that our economic system is subject

(29) Prolonged and too rapid inflation may, of course, produce pessimistic reactions.

(30) This has been pointed out many years ago by A. C. PIGOU in his *Industrial Fluctuations*, 2nd ed., London, 1929.

In Part. I, Chapter 22, He says: « It is possible that more than one factor may be a dominant cause of fluctuations in the sense that, if it were removed, the amplitude of these fluctuations would be reduced to insignificant proportions ». (See *op. cit.*, Table of Contents, p. XIII.)

(31) To assume that it is rigid in the long run or subject only to autonomous changes (due to technological innovations) and not to equilibrating adjustments seems to me hopelessly unrealistic.

to cumulative, self-reinforcing processes of expansion and contraction.

Third, there are autonomous changes in aggregate expenditure, especially the concentrations followed later by slumps of investments demand (including demand for consumer durables) caused by technological innovations and above all by wars and preparations for war. These « real factors » obviously do contribute their share to economic instability. But in my judgment it is mainly in their role as starters, intensifiers and interrupters of cumulative processes that they do their destabilizing work. That is to say, the « propagation problem » is more important than the « impulse problem ». And in the propagation mechanism, the way in which the economy responds to outside impulses, the monetary factor plays a decisive role.

One important reason for this hypothetical evaluation is the historical experience that modern economies frequently take terrific

impulses and shocks in their stride while on other occasions they seem to react strongly to modest shocks. Recent history offers numerous examples. Let me mention the transition from peace to war and the transition from war to peace, the latter entailing a tremendous sudden drop in government expenditures; another example is the reconstruction of war-torn countries — such as Italy, Germany, Austria — and the subsequent levelling out of these economies into a more normal course of development. These shocks, which were absorbed with surprising ease, were certainly incomparably more severe than those that are supposed to have started the Great Depression.

I conclude that the response mechanism is more important than the severity of the external shocks and in the response mechanism monetary factors* play a most important role.

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