ESSAYS IN INTERNATIONAL FINANCE

No. 50, December 1965

THE CRAWLING PEG

JOHN H. WILLIAMSON

INTERNATIONAL FINANCE SECTION
DEPARTMENT OF ECONOMICS
PRINCETON UNIVERSITY
Princeton, New Jersey

This is the fiftieth in the series ESSAYS IN INTERNATIONAL FINANCE *published from time to time by the International Finance Section of the Department of Economics in Princeton University.*

The author, John H. Williamson, received a B.Sc. (Econ.) degree from the London School of Economics and a Ph.D. in Economics at Princeton University. He is now a Lecturer at the University of York, England, and has recently been elected to the Board of the REVIEW OF ECONOMIC STUDIES.

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International Finance Section

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L.C. Card 66-15493

Printed in the United States of America by Princeton University Press
at Princeton, New Jersey

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Introduction

By historical standards, the record of the international economy in the postwar period is unquestionably one of outstanding progress. There has been unparalleled economic growth and a rapid expansion in world trade. International integration has progressed beyond what all but the most optimistic would have prophesied in 1945. Most countries have enjoyed tolerably high levels of employment for most of the time, and those with the good fortune to have undervalued exchange rates have been able to afford very high levels. It may seem paradoxical that the international monetary system that has fostered this record should have engendered such intense debate on its defects and dangers. Nevertheless, one of the few things that the participants in this debate would agree on is that there is a need for further discussion if the system is to continue evolving at a pace adequate to meet the expanding demands being made upon it.

During the course of the debate, the nature of the political constraints that inevitably circumscribe the possibilities of reform have gradually become apparent. In particular, three basic features of the present system are, for the time being at least, regarded as sacrosanct. One of these is the fixed price of gold. A second is that owned reserves should continue to consist primarily of gold, supplemented in some way by the national currencies of some or all of the major economic powers. The third is that the par value of each currency should normally be fixed, but that there should remain a loophole to enable changes to be made in cases of "fundamental disequilibrium."

Whether or not one personally believes that these constraints are particularly intelligent ones, the fact is that they exist; to ignore them may be a valuable intellectual exercise, but it is unlikely to be of relevance to policy formulation in the foreseeable future. In recognition of this situation, attention has recently tended to shift away from the radical original proposals—floating exchange rates, the transformation of the IMF into a world central bank, a doubling of the price of gold—toward more modest proposals designed to improve the working of the system within the context of the constraints listed above. The new discussion has concerned composite reserve units, widening the band of permissible exchange-rate fluctuations, increasing the automaticity of access to IMF quotas, intervention in the forward market, exchange guarantees, and cooperation among central banks.

The proposal to be analyzed in this paper is, likewise, concerned with a mutation of the present system. In the form in which it has been presented by Professor Meade (*Three Banks Review*, September 1964) it conflicts with the third of the politically imposed constraints. But there is no reason why it should not be modified to remedy this defect; it has long ago been discovered that almost any of the proposals advanced can be subjected to a near-infinite number of permutations. The particular version that will be discussed in this paper is:

> That those countries accepting the obligations of Article VIII (sections 2 to 4) of the Articles of Agreement of the International Monetary Fund (i.e. those with convertible currencies) should undertake that any changes in par value needed to correct a "fundamental disequilibrium" would be carried out gradually, at a maximum rate of 1/26 of one per cent per week, rather than in a sudden discrete jump.

The essential corollary of the proposal is that countries should maintain interest rates at levels adequate to prevent such creeping changes in exchange rates from giving rise to capital flows.

The reason for burdening this proposal with the inelegant label of the "crawling peg" should be apparent. The "adjustable peg" has come to mean that system under which par changes are carried out infrequently, suddenly, and in a sizable discrete step. The "crawling peg" will be used to mean a system under which such par changes as occur are implemented slowly, in such a large number of small steps as to make the process of exchange-rate adjustment continuous for all practical purposes; a system, therefore, under which the peg crawls from one level to another.

Operation of the Proposal

If the proposal were to be implemented in this form, it would mean that, at any given time, the exchange rates of all countries with convertible currencies would be fixed within a narrow range, as at present. For most currencies this range would stay the same from one week to the next. However, certain countries—those where a persistent payments deficit or surplus had emerged at the optimum level of employment—would have a range that altered, in a preannounced manner, from week to week. Central banks would intervene in the market to stabilize the rate when it approached its current limits.

The incentive to transfer funds out of a currency undergoing devaluation (or into a currency undergoing upvaluation) would be neutralized by interest-rate differentials. Suppose that country A had an-

nounced that it was going to lower its peg at the maximum permissible rate, 2 per cent per annum, for two years, in order to adjust to a realistic parity, and that no other country felt the need for an adjustment of its exchange rate. To appreciate the relevant principles, it is sufficient to assume that there are only two types of securities in each country—bills, and consols with a nominal yield of 5 per cent. Suppose that the interest rate in the rest of the world was 4 per cent on bills and 5 per cent on consols. Then, assuming perfect markets and an absence of tax complications, the necessary condition for investors to be indifferent between holding their funds in the devaluing country A, or abroad, is that the bill rate in country A should rise to 6 per cent and that the yield on consols should rise to 7 per cent. In two years time these yields would fall back to the level prevailing elsewhere, so that the price of consols would again be equal to that in the rest of the world. At the outset of the downward crawl of the exchange-rate peg, the price of consols in A would have to decline to about 96, so as to make the total yield 7 per cent (5 per cent plus 2 per cent capital appreciation). In other words, both long and short-term interest rates would be determined by those prevailing elsewhere, but the price of bonds would not have to decline to anywhere near the level needed to raise the long-term interest rate to 7 per cent. (The long-term interest rate is defined as the coupon rate divided by the price of the bond.) In practice, since income is generally taxed more highly than capital gains, it is probable that the interest-rate differential needed to prevent capital flows would be rather greater than the rate of depreciation of a currency.

It was suggested by Meade that one might treat funds owned by central banks as part of their countries' reserves differently from the funds owned by private individuals. Meade envisaged the assets of central banks carrying a lower interest coupon but accompanied by an exchange guarantee. In order to implement this proposal, it would presumably be necessary to create special securities to be held by official institutions, since otherwise one would create unlimited possibilities of profitable arbitrage with the private sector. The idea seems quite unnecessary unless central banks have a unique disinclination to show a capital loss on their balance sheets even when this is compensated by a gain on current account. One would therefore be introducing rigidities into national security markets for no apparent purpose. Accordingly, it is assumed in this paper that no special treatment would be given to assets held by central banks.

An essential feature of the proposal is that the size of each individual change in the peg should be very small—well within the band of permissible exchange-rate variations. If the process were to occur in dis-

crete steps of any size, there would be difficulty in avoiding occasions, just before a peg change, when it would be worth switching out of the currency. Monthly changes would be feasible, but, in order to emphasize the inconsequential nature of the particular date on which a reduction in par value occurs, it seems advisable to choose even shorter intervals.

The proposal has been confined to those countries with convertible currencies for two reasons. By and large, it is only these countries that enjoy sufficiently diversified economies and sufficiently sophisticated monetary management to offer one any confidence that they will be able to avoid the occasional need for adjustment more rapid than can be provided through a crawling peg. Moreover, the problem of avoiding massive shifts into and out of inconvertible currencies is not acute; efforts to get out are relatively easy to control, and because people fear these difficulties in getting out they are unlikely to shift in.

If the proposal were to be implemented, it would be important to maintain (or possibly even strengthen) the right of the IMF to veto par changes that it enjoys under Article IV, section 5, of its Charter. Without this, there might be some danger of a revival of competitive depreciation. Under the adjustable peg it is virtually impossible to debate a proposed par change, because of the effect this would have on hot-money flows, but the principal advantage of a crawling peg is that such flows could be eliminated. It would therefore be perfectly feasible for the IMF to use its veto powers effectively; this would, in fact, permit a return to the original spirit of Bretton Woods.

There are three major problems concerning the present international monetary system: the problem of payments adjustment, the problem of international liquidity, and the problem of confidence in convertible currencies, particularly those used as reserve media.[1] The remainder of this paper will be devoted to an analysis of the impact the proposal would have in each of these areas, to a consideration of the equity aspects of the proposal, and to a discussion of the problems it would raise for the internal management of an economy.

Confidence

One cannot expect people to accept an avoidable capital loss. The present system threatens those holding a particular currency with a

[1] This classification follows that in *International Monetary Arrangements: The Problem of Choice*: Report of the Deliberations of an International Study Group of 32 Economists (Princeton: International Finance Section, 1964), p. 24. Incidentally, in the hope of contributing to the evolution of a common vocabulary, potentially ambiguous terms are used in the same way in the present paper as they were in that Report.

substantial overnight capital loss in the event of devaluation, and consequently it is not surprising to find that people attempt to protect themselves by moving out of a suspect currency. The magnitude of such speculative flows is already large, as witnessed by the British crisis of 1964-65, but there is no reason to believe that this represents the maximum extent of the problem. An indefinitely large part of a country's stock of money and quasi-money is potentially available for conversion. November 1964 marked the first occasion, other than in hyperinflation, when the man in the street experimented with converting his part of the money supply as a hedge against devaluation; many branches of British banks were denuded of their stocks of foreign currency. It is only realistic to assume that this type of practice will become commonplace as foreign travel becomes routine, and the potential consequences for the size of speculative flows do not need elaboration.

Even when a speculative attack does not succeed in forcing a devaluation, it is likely to have a number of undesirable consequences. In particular, it is bound to lead to a disruption of financial markets and may impose an arbitrary level of deflation in the losing country and inflationary monetary effects in the recipient country. More important still are the consequences if the attack succeeds. If devaluation was really needed and the authorities were simply unwilling to face the fact until the attack forced them to do so, then the speculators have performed a useful function, but one may reasonably hold that it is undesirable that they should be rewarded for this in the rather handsome and capricious manner that prevails under the present system. If the country was not faced with a "fundamental disequilibrium," but the attack nevertheless succeeded, the consequences would be near-disastrous: disruption of trade, a completely irrational bonus for the speculators, and the threat of inflation in the devaluing country and of deflation in other countries as the problem of adjusting back to a realistic parity came to the fore. The Basle agreements and the swap arrangements between central banks have arisen principally to avert these dangers of private speculation.

This raises the second aspect of the problem of confidence—the confidence of central banks that exchange rates will be maintained. It is important here to distinguish between that part of intercentral-bank lending that arises primarily to provide owned reserves to the lender and that part the purpose of which is to provide borrowed reserves to the borrower, because in practice the latter is subject to an exchange guarantee while the former is not. So far as the former is concerned, the central banks involved are subject to the same considerations as are private individuals, but have in the past reacted in a much more

restrained manner. (Even so, there is some evidence that they have tended to shift out of a threatened currency.[2]) But up till the present there is no historical instance of a reserve currency ever having been devalued in anything remotely resembling "normal" circumstances; devaluation has always appeared as a once-for-all response to a very special situation. One may reasonably doubt whether central banks, especially the peripheral ones, would continue to be as restrained in switching between reserve assets if it were demonstrated that a reserve currency could be devalued in "normal" times.

If switching by the peripheral central banks were to be added to speculation by private individuals, the magnitude of the offsetting operations required of the IMF and key central banks would be formidable. This is not to say that speculation would overwhelm the capacities of these institutions, because there is no limit to the extent to which a central bank is able to offset a flow into its own currency other than its willingness to do so, for it can always lend the sums being transferred to it back to the country from which they originated. This is precisely what happens under the type of intercentral-bank lending typified by the Basle agreements. Since such lending carries an exchange guarantee, the lending country is free of the fear of capital loss. Despite this, it is quite clear from the speeches and actions of the central bankers that they have no intention of providing unconditional credit in unlimited quantities to any country that is willing to offer an exchange guarantee on its borrowing. The condition for the provision of such credit is likely to remain that the borrowing country should be taking adequate steps to correct its payments imbalance.

The position, therefore, is that speculative flows are likely to be large; that the IMF and key central banks will technically be in a position to offset such movements; but that they will only be prepared to do so if they are satisfied as to the adequacy of the remedial measures being undertaken by the deficit country. It is apparent that what one may term "the international authorities" (by analogy with "the authorities" of domestic fiscal and monetary policy) are virtually certain to be thrust into an increasingly critical role in determining domestic economic policies, particularly of countries with overvalued exchange rates and convertible currencies. The proper extent of foreign influence on a country's domestic policy is a subject of substantial disagreement,

[2] Apart from the well-publicized activities of the French, Chinese, and other authorities in 1965, there is evidence of a shift out of dollars into gold in the last quarter of 1960. See Peter B. Kenen, *Reserve-Asset Preferences of Central Banks and Stability of the Gold-Exchange Standard,* Princeton Studies in International Finance No. 10 (Princeton: International Finance Section, 1963).

that will be considered later. It suffices at present to note that if one is prepared to accept the judgment of the international authorities (recognizing that the importance of this judgment is likely to increase substantially in future years) as to what constitute appropriate steps to correct a payments imbalance, one need not be unduly concerned with the confidence problem. For these authorities possess the power to counter speculative flows, and hence speculation will be offset when it should be and will force action only when action is called for.

Those who are less sanguine about the wisdom and enlightenment of central bankers may well fear the possibility of a deflationary bias being imparted to the international economy by the type of conditions they are likely to impose. The danger would seem to be that the initial response of central bankers, when confronted by a run on another country's currency, will be to extend credit almost automatically, whether or not the existing exchange rate is realistic. This is probable because it is much more comfortable to manage an undervalued than an overvalued currency, and if the central bankers do not have time to consider their appropriate response carefully they are likely to play it safe and so avoid any possibility of having their own enviable position undermined. Once large credits have been received by a country under speculative pressure, it becomes much more difficult to devalue: there is a greater cost in terms of real resources because of the exchange guarantee, there is a danger of magnified effects on future confidence, and—most important of all—the government of the threatened country has staked its prestige on maintaining the exchange rate. At this point the central bankers of the creditor countries are likely to recall their divine commandment to maintain discipline. The deficit country is caught helpless between the ignominious course of reneging on its promises by devaluing after all, and the painful course of following the deflationary dictates of its foreign creditors. All this is not a farfetched possibility: it is provoked by the realization that the experiences of Britain's Labour government are alarmingly likely to be a precedent.

The most immediate and important advantage that the proposal for a crawling peg offers concerns the elimination of these problems of confidence. If a change in peg were to occur gradually, the prospect of impending devaluation would provide no incentive for a withdrawal of funds, since the value of a currency on the day after devaluation was announced would not differ materially (if at all) from its value the day before. There would, of course, be an incentive to withdraw funds after the announcement if interest rates in the devaluing country were not sufficiently above those elsewhere to maintain the same net yield, and this fact would force an upward revision in interest rates

whether or not the devaluing country welcomed such an occurrence. This in turn means that the *prospect* of a devaluation would be sufficient to lower the price of long-term securities (and possibly of equities). In most cases this would act as a desirable corrective, since the threat of devaluation normally emerges through a country indulging in inflationary excesses. On the other hand, it is possible for overvaluation to emerge for other reasons, such as an autonomous shift in demand away from a country's exports. More important in practice, an overvaluation that results from inflationary policies can persist even after elimination of the excessive demand that caused it, because of the downward inflexibility of costs. In such circumstances the need for high interest rates to permit depreciation of the exchange rate could conflict with the desire to pursue a monetary policy appropriate to the domestic situation of the country. This problem is discussed subsequently.

So far as the confidence issue is concerned, the impact of the crawling peg is clear. The incentive for massive shifts of liquid funds, owned either by individuals or central banks, would be removed; the shocks this imposes on the system would end; and a deficit country would have much less need to rely on the benevolence of foreign central bankers. This would be an important gain in the short run, but its crucial significance lies in the impact it would have on the long-term survival prospects of the system. If, as seems probable, par changes tend to lead to a cumulative decrease of confidence in the future permanence of exchange rates, then the adjustable peg is unlikely to be viable indefinitely. Ever increasing destabilizing speculation will result if pegs are apt to jump; and if they lethargically sit in their holes, they will have ceased to be adjustable. Crawling pegs can resolve the dilemma.

It has recently been suggested by Fred Hirsch that, while there is a strong case for introducing the crawling peg as soon as the opportunity occurs

> . . . . . that opportunity may not come before a major exchange upheaval itself. The essence of any successful operation in the exchange market, as in nuclear deterrence, is to achieve credibility: and if at a time when speculators have been guessing that your currency may be devalued by 10% you introduce a complicated scheme allowing it to be devalued by 1%, few people will believe that this is the finish. (F. Hirsch, *The Pound Sterling*, London: Victor Gollancz, 1965, p. 116.)

The short answer to this is that the scheme's success is not dependent

on asking people to believe that 1 per cent is the finish. All one need ask them to believe is that countries would be content to seek a gradual cure. It would not even be essential to convince the public of this; it would be possible to launch the scheme safely as soon as one had convinced the international authorities. In practice, there does not seem to be any reason for believing that it would be particularly difficult to achieve credibility with the public. If the latter can be convinced, even in 1965, that the existing exchange-rate structure is not doomed, it is not apparent why they should believe that its amendment is so urgent as to preclude taking several years in the process. Indeed, by providing an alternative to the traditional form of devaluation that the public could believe would be acceptable to "radical" governments, one might hope that the proposal could add credibility to the present position of the reserve currencies in a manner that promises of incomes policies and deflation cannot hope to.

Adjustment

Many economists believe that in the postwar period too little use (or, more accurately, perhaps, too infrequent use) has been made of exchange-rate variations in promoting balance-of-payments adjustment. The objections to alternative methods of adjustment—deflation and inflation, trade controls, tailoring government spending, aid, or long-term capital movements to payments considerations—are so familiar as to need no repetition. These alternatives are all deemed undesirable because of their direct and inevitable consequences—consequences that would continue to follow irrespective of the form of the international monetary system. The situation is slightly different with exchange-rate variations. There are three objections to their use. One is the disruption of trade and international integration that they entail, but this is essentially an objection to large and/or unpredictable rate changes. The changes in relative international costs that would be involved in a crawling peg are no greater than those that arise at present from divergent national monetary policies, so that it seems legitimate to discount this objection as regards the present proposal. The second objection is that their use weakens the discipline on national monetary authorities to follow responsible policies—this point will be discussed in due course. The third, and probably most important objection, is that prospective par changes cause massive speculation and, where reserve currencies are concerned, also threaten to destroy international liquidity. This is a defect that arises out of the present structure of the international monetary system and would disappear if the problem of confidence were to be solved by adoption of the crawling-peg proposal.

It would therefore become more readily possible to use par changes as a means of adjustment if the peg were to move gradually instead of in a single jump. Whether it would actually be used more frequently would depend on an evaluation of the relative importance of international integration and the maintenance of full employment.

Payments "adjustment" is defined in *International Monetary Arrangements* (p. 15) as "the process by which deficits and surpluses are eliminated." On this definition there would seem to be a need for a further sub-classification. Some measures, which will be termed "quasi-adjustments," eliminate an imbalance at the cost of creating a permanent departure from the desired resource allocation or income distribution; others, to be termed "basic adjustments," consist of temporary measures that will permit the ultimate restoration of a normal (or most-desired) situation.[3] Quasi-adjustments obviously include trade controls and manipulation of government spending, aid, and capital flows in the interests of payments balance. If one believes that, in a given historical environment, there are optimal levels of employment, trade controls, overseas government expenditure, aid, and capital exports that depend on real rather than monetary factors, then the only basic adjustments are those that result in a change in relative international prices. Measures capable of securing a basic adjustment are therefore confined to exchange-rate changes, inflation/deflation, and (conceivably) successful incomes policies.

In the long run, primary reliance must inevitably be placed on basic adjustments. Quasi-adjustments cannot be pushed indefinitely far one way or the other, so that they cannot deal with cumulative departures from equilibrium. (The possible exception is continually increasing capital exports by a chronic-surplus country, as with Britain prior to 1914.) They are similar to the use of large amounts of liquidity in that they provide time for a basic adjustment to occur, though they differ in that they can be maintained indefinitely without a basic adjustment occurring. Since quasi-adjustments cannot in themselves

[3] Fritz Machlup has recently made an almost identical distinction in the *Festschrift* for Haberler: what is here called a "basic adjustment" is termed by him a "real adjustment," while "quasi-adjustments" correspond to Machlup's "compensatory corrections." Machlup bases his distinction on what I would regard as the essentially arbitrary question as to whether the adjustment measure is or is not a part of the classical mechanism, in contrast to the criterion in the text concerning the effects of reversing the measure. This leads to one significant difference in classification: the income effects of a deflation are a quasi-adjustment under my scheme but a real adjustment under Machlup's. See Fritz Machlup, "Real Adjustment, Compensatory Correction, and Foreign Financing of Imbalances in International Payments" in Robert E. Baldwin et al., *Trade, Growth, and the Balance of Payments* (New York: Rand McNally and Amsterdam: North-Holland Publishing Co., 1965).

create a situation in which the ultimate goals of the economic system will be realizable, a reasonably efficient performance of the international economic system requires that it contain some mechanism for securing basic adjustments. Unless and until there are grounds for believing that incomes policy is capable of manipulation as an effective policy variable independent of the level of aggregate demand, the choice boils down to deflation versus devaluation or inflation versus upvaluation. The income effects of deflation constitute a quasi-adjustment mechanism; it is only the price effects that contribute to basic adjustment. The experience of recent years suggests strongly that price reductions (relative to the rest of the world) will be slow in occurring, even with substantial excess capacity, so that deflation will be a painful way in which to secure a basic adjustment. It is for this reason that many economists believe it to be important to retain the possibility of exchange-rate changes. The author is certainly among those who would hope that the authorities would choose to make use of the freedom to alter par values that a crawling peg would afford.

However, under the crawling peg it would be impossible to secure a major adjustment with the rapidity possible under the adjustable peg. To this extent the proposal would actually increase the discipline on monetary authorities to avoid grossly excessive inflation. The proposal could therefore be criticized from diametrically opposite viewpoints. To those who place the need for discipline above all else, it will seem to give too much leeway for irresponsible behavior. To those who hold the opposite viewpoint,[4] that a country should be free to pursue whatever internal policy it wishes, irrespective of the external consequences, the crawling peg would place undesirable restrictions on that freedom. There is, however, a third possible view—that countries have a right to restrain their neighbors from indulging in monetary policies that have disruptive effects on themselves, but that this is the limit of their legitimate interest in other countries' internal policies. To those who hold this view, the proposal offers an attractive compromise between the need to prevent irresponsible actions in one country having harmful effects elsewhere, and the desire to allow each country to select its own economic policy rather than having this dictated from outside. If the crawling peg were to be used to permit more frequent changes in exchange rates, each country would have a considerable extension of the range of the unemployment/inflation trade-off where it could operate without external constraints. However, this would not be such as to enable a

[4] For example, Milton Friedman; see "The Evolving International Monetary Mechanism," *American Economic Review, Papers and Proceedings*, Vol. LV (May 1965), p. 179.

country to inconvenience its partners by draining away vast amounts of real resources or creating sudden and unexpected changes in relative costs and prices.

To one who holds this third position, a major factor governing acceptability of the proposal is the factual judgment as to whether the rate of depreciation that would be feasible under a crawling peg could be relied upon to provide adjustment with the required rapidity. (One might consider permitting a faster rate of depreciation in emergency cases—though it is doubtful whether an interest-rate differential of more than 4 per cent would be acceptable on internal grounds—but the retention of any loophole allowing changes by large steps would defeat the object of eliminating the confidence problem.) There is no way of answering this question conclusively, but it seems appropriate to draw brief attention to the type of evidence that is currently available.

First, it is relevant to note that postwar experience has suggested that exchange-rate changes are a potent means of altering imbalances; the pessimism about possible instability of the foreign-exchange market has been dispelled by events. While both the 1949 and 1958 devaluations were of a very large magnitude, both of them overcorrected very substantial deficits. Indeed, the 15 per cent devaluation of the French franc transformed France from the sick man of Europe to the country whose officials pontificate most fulsomely about "discipline" and "irresponsibility." The results of the German, Dutch, and Canadian par changes are also reasonably encouraging.

A second piece of evidence is provided by a comparison of the rate of inflation in different countries during recent years. As a first approximation, one may assume that an x per cent inflation relative to the rest of the world could be neutralized by an x per cent devaluation. If all rates of inflation were within 4 per cent of one another, therefore, all countries could hope to maintain balance (starting from an initial position of equilibrium) by crawling pegs, provided that all countries (both those inflating faster and those lagging behind) were prepared to engage in continuous peg-crawling. If no rate of inflation were more than 2 per cent in excess of that elsewhere, then every country could hope to avoid imbalance even by unilateral peg-crawling. (Needless to say, this is not to be taken as an endorsement of the idea that pegs should only crawl one way, nor of the proposition that countries should dedicate themselves to continuous peg-crawling.) Three measures of the rate of inflation are shown in Table 1. On the basis of the 2 per cent margin, it is evident that Austria would have been in trouble as measured by wholesale prices, the United Kingdom as measured by export prices, and Denmark and Japan as measured by the cost of

living. These are all very marginal excesses, however, and do not give rise to serious concern as to the ability of the mechanism to cope with the maladjustments of recent years. The one country that would clearly have been forced to curb its irresponsible actions is France. In view of present-day French attitudes, one may presume that they would have welcomed the imposition of a little discipline.

Table 1

Rate of Price Increase in the Principal Financial Countries, 1953-1964
(average per cent per year)

Country	Index of Wholesale Prices		Index of Export Prices	Index of Cost of Living
Austria	2.2	(1)	0.1*	2.6
Belgium-Luxembourg	1.0	(2)	−0.5*	1.7
Canada	0.9	(3)	0.9	1.5
Denmark	1.6	(4)	0.1*	3.5
France	3.3	(1)	3.0	4.2
Germany	0.7	(5)	0.3	2.0
Italy	0.9	(3)	−1.0	3.1
Japan	0.1	(3)	−1.0*	3.4
Netherlands	1.1	(1)	0.2	2.9
Norway	1.7	(1)	0.5	3.1
Sweden	2.1	(1)	0.4*	3.2
Switzerland	1.6	(4)	n.a	1.9
United Kingdom	2.0	(6)	1.3	2.7
United States	0.8	(3)	0.8	1.3

Source: *International Financial Statistics*, IMF, December 1963 and April 1965.

Notes: The series for wholesale prices differ between countries as indicated by the following key:

(1) Prices: home and import goods
(2) Wholesale prices: home goods
(3) Wholesale prices
(4) Prices: home goods
(5) Wholesale prices: industrial
(6) Prices: industrial output

Where two series for export prices are given, that for the unit value of exports has been selected.

* Indicates that the calculation was limited to the ten years 1953-63 because of lack of data.

A third source of evidence is provided by econometric estimates of the price elasticity of demand for exports and imports. Estimates of the export elasticity have exhibited a secular upward trend during the post-war period: from well under unity for both the United Kingdom and the United States in 1949 (Chang), to a minimum of 1.35 for the U.K. and 1.65 for the U.S.A. in 1957 (Harberger), to 3 for the U.K. in 1958 (Zelder), to 4 for the U.S.A. in 1962 (Polak and Rhomberg).[5] Doubtless this is a case in which it would be rash to extrapolate beyond the period of observation; but it certainly seems that one now has to be a distinct pessimist to regard a figure of 2 for the export elasticity and ½ for the import elasticity as more than minimum estimates, even for major trading nations such as the United States and Britain. And theoretical considerations indicate that one would expect the figures to be even higher for smaller countries.

The task of converting such estimates into a figure for the overvaluation of the dollar need not be attempted, as there is a much more sophisticated study than anything the author is in a position to attempt already available in an article by J. E. Floyd.[6] His conclusion was that the overvaluation of the dollar in the early 1960s was at most 10 per cent and was probably less than 4½ per cent. So far as the other chronic deficit country, Britain, is concerned, one may make some crude calculations that can indicate at least the order of magnitude of the overvaluation. The necessary improvement in the trade balance may be taken as £400 millions in a cyclically typical year. Since about 20 per cent of British costs consist of imported materials and the wage-price spiral may be expected to double any price increase that results from devaluation,[7] it is prudent to assume that up to 40 per cent of a devaluation could be neutralized by the consequential inflation. (The

[5] Tse-Chun Chang, "A Statistical Note on World Demand for Exports," *Review of Economics and Statistics*, Vol. XXX (1948); Arnold C. Harberger, "Some Evidence on the International Price Mechanism," *Journal of Political Economy*, Vol. LXV (1957); Raymond E. Zelder, "Estimates of Elasticities of Demand for Exports of the United Kingdom and the United States," *Manchester School of Economic and Social Studies*, Vol. XXVI (January 1958). The figure for the Polak-Rhomberg study is quoted in the Brookings Report, *The United States Balance of Payments in 1968*, Joint Economic Committee (Washington, 1963), p. 82.

[6] John E. Floyd, "The Overvaluation of the Dollar," *American Economic Review*, Vol. LV (March 1965). Floyd was commenting on an earlier estimate of Houthakker which yielded a higher figure of around 20 per cent, but this was based on the purchasing-power-parity theory. While the latter provides a reasonable basis for calculating how far a country has departed from an initial position of external equilibrium, it is widely recognized as being inadequate to support a calculation of overvaluation from first principles.

[7] See L. A. Dicks-Mireaux, "The Inter-relationship between Cost and Price Changes, 1946-59," *Oxford Economic Papers*, N.S. Vol. 13 (October 1961).

figure would be lower insofar as devaluation did not lead to a proportionate rise in the sterling price of imported materials.) On the other hand, it is unnecessary in the British context to allow for a partial nullification of devaluation by higher domestic absorption of goods and services, as the average level of unemployment in recent years has not exceeded the level that would be considered desirable on domestic grounds. With a price elasticity of demand for exports of two, for imports of a half, and infinite supply elasticities, these assumptions suggest that the pound is overvalued by about 10 per cent. The author would regard this as a maximum estimate; quite plausible values of the elasticities and assumptions regarding the effect of devaluation on domestic prices are compatible with a figure half that size. An overvaluation of 10 per cent or less could surely be remedied with adequate speed through a crawling peg, for it is at least five years since the weaknesses in the position of the pound and the dollar became apparent. On the other hand, an overvaluation much above 2 or 3 per cent would seem (except at a time of rapid worldwide inflation) to impose an excessive burden of deflation on any country seeking to correct its external accounts through manipulation of its internal price level.

The evidence, therefore, would seem to justify a position of cautious optimism. It suggests that very moderate par changes would be adequate to cope with the adjustment problem, and these changes could be engineered with reasonable speed through the mechanism of a crawling peg.

A final advantage to a gradual adjustment of exchange rates would be the possibility of avoiding overshooting. Since par changes are so disruptive under the present system, there has been a tendency to make sure that any change in the downward direction that did occur was adequate, with the consequence that changes have gone farther than was necessary and so created subsequent problems for other countries. If the aura of cataclysm were to be removed from a par change, it would be possible to aim at a realistic adjustment rather than one to cope with the worst possible contingency. Indeed, if, in the light of developments during the crawl, a country were to decide that the change originally announced was too large or too small, it would be possible to curtail or extend the duration of the crawl without any major impact other than in the gilt-edged (and possibly equity) market.

Liquidity

It is widely agreed that the purpose of liquidity is to tide a country over a period of temporary deficit in its payments. Hence Jacques

Rueff's logic is impeccable when he claims[8] that it is unreasonable to expect one country to finance another's deficit unless it can confidently anticipate that the borrower will be in a position to repay within a calculable period of time. It follows that the conceptual test as to whether liquidity is adequate must be whether a country with a foreseeable reversal in its deficit is being forced to take measures over and above those needed to restore its external position in the long run, though just how long a time span should be comprehended in the "long run" is a matter for legitimate dispute. The trouble with this test arises, of course, from the deficiency of foresight. Because of this, opinions as to whether liquidity is adequate tend (insofar as they are rational at all) to be based less on a weighing of the probability that the situation will be righted without further action than on an assessment of the costs that would be imposed by further adjustment measures. The French, because of their cavalier dismissal of the costs of adjustment, whether by deflation or devaluation, believe that there is no liquidity problem. The "Anglo Saxons" rate the costs of adjustment more highly, possibly because of their greater experience of deflation and of managing a reserve currency. They consequently feel a greater need for liquidity, but this has brought them close to the perilous position of appearing to want further loans without the prospect of being able to repay these over any definite future period.

By providing a reliable (though long-term) adjustment mechanism that could be used in a responsible manner, the crawling peg might assist in reconciling these divergent attitudes. If exchange-rate variation were to be reinstated as a policy variable in the form suggested, it would enable credit to be extended by a surplus country in a rational manner —that is, with an assurance that repayment would be possible in a calculable time but without the imposition of unreasonably onerous conditions as to deflation of demand in the borrowing country. (One might even wake up one morning to discover that central bankers are not the ardent deflationists they so often appear to be, but have simply been doing, in the only way they had available, their duty of not lending what cannot be repaid.)

Because the adjustment mechanism would be slow in operating, there would continue to be a need for a substantial liquidity base to the world economy. However, one could expect some reduction in the need for liquidity if the authorities chose to utilize their increased freedom to vary exchange rates, since adjustment and liquidity are to some extent

[8] Jacques Rueff and Fred Hirsch, *The Role and Rule of Gold: An Argument,* Essays in International Finance No. 47 (Princeton: International Finance Section, 1965).

substitutes. Alleviation of the confidence problem may similarly be expected to reduce the need for liquidity, especially the second-line credit now largely used to offset hot-money movements. If it were so desired, it would be possible to restore short-term private capital movements to the role they filled under the classical gold standard, of financing the deficit while a long-term adjustment mechanism was brought into play.

Equity

The author is not one of those who believe it to be wrong for an economist to analyze whether his proposals would contribute to equity, though he would, of course, agree that it would be wrong for him to attempt to impose his own standards of what is equitable on the community. It happens that in the present context there are a number of ideas as to what is fair that would probably win wide acceptance, and it is one of the merits of the proposal under investigation that it is, in general, in conformity with those standards.

If one compares a 5 per cent devaluation under a crawling peg with the same devaluation under the adjustable peg and assumes that foreign creditors of the devaluing country hold all their assets in short-term securities, then these creditors suffer a 5 per cent expropriation, measured in their own currencies, under the present system, but they would lose nothing under the crawling peg. In effect, the crawling peg constitutes an index-linked bond in reverse: one gains on current account what one loses on capital account. The effect for creditors is the same as if an exchange guarantee had been in operation. When foreign residents or banks make a loan under a regime of fixed exchange rates, they presumably do so in the expectation that the implicit commitment to maintain the capital value of the loan intact in terms of their own currencies will be honored. Honoring commitments is widely accepted as ethically proper behavior.

The inevitable corollary of this is that domestic creditors would also benefit, though probably to a lesser extent since they are more likely to hold their funds in long-term bonds, and these will suffer a decline in capital value when the devaluation is announced. It is much less widely accepted that this would be just, since the majority of interest payments go to the relatively affluent and a devaluation is, therefore, likely to worsen the distribution of income. On the other hand, an upvaluation would have the reverse effect. Furthermore, insofar as devaluations are likely to result from excessive inflation, one could argue that the proposal would merely force an adjustment of the money rate of interest to the natural rate.

It is widely felt that inflation is an irresponsible and reprehensible

form of behavior. Under the adjustable peg, a country indulging in it to excess—especially a country with a reserve currency—can gain important benefits for a limited period by drawing in real resources from the rest of the world; this is one of the French complaints against the present system that must enjoy wide sympathy. Eventually, however, the country will be faced with a choice between devaluation and accepting a long period of deflation in order to bring its costs back into line with those of the rest of the world. The former threatens future confidence in exchange-rate stability and also involves partial expropriation of those foreigners foolish enough to have made loans to the country in question, while the latter is a straightforward waste of resources. Whether or not one is an advocate of discipline, this is surely a most peculiar and arbitrary assortment of penalties. Unless one believes in discipline for its own sake—no doubt a tenable view for one who has a retributive philosophy of justice—it would seem that the interest of the rest of the world should be satisfied by ensuring that inflation does not permit a transfer of real resources to the inflating country that is unwelcome to the rest of the world. This could be achieved under the crawling-peg system. An extra 2 per cent inflation would require a 2 per cent depreciation, which would involve the payment of an additional 2 per cent interest, so that there would be no opportunity for the inflating country to gain real resources by partially expropriating its creditors. Similarly, the international authorities would be in a position to insist that an inflating country which refused to curb demand should undertake a gradual devaluation so as to limit the spillover of its excess purchasing power into the rest of the world.

Domestic Implications

Adoption of the proposal would have important repercussions on the problem of internal stabilization of the economy. It has already been pointed out that if the crawling peg were to make exchange-rate changes a more frequently used form of adjustment, this would have the effect of increasing a country's freedom to choose the particular combination of unemployment and inflation that it preferred. The intention of this section, however, is to analyze the way in which monetary and fiscal policy would have to be combined to attain whatever particular domestic target were selected.

Under the proposal, the level of interest rates would be determined, even more than it already is, by the need to neutralize the incentive to transfer funds between countries. The constraint on monetary policy would be particularly severe on a country undertaking a devaluation, and hence compelled to maintain a high structure of interest rates. So

far as maintenance of a full-employment level of income is concerned, this could be offset by a suitably expansionary fiscal policy. This would tend to lead to an enlargement of the national debt, with a consequential accentuation of the tendency for interest receipts to rise as a proportion of national income.

The internal problem is a little more complex than simply maintaining full employment, however, since it is generally accepted that a tight monetary policy combined with an expansionary fiscal policy is less conducive to growth than the reverse. The reason is, of course, that low interest rates are believed to expand demand primarily by encouraging investment, while an expansionary fiscal policy usually acts by stimulating consumption. However, "fiscal policy" is not a single policy variable, from this point of view. Tax concessions can be varied to have differential impacts on investment and consumption expenditures. In particular, the current emphasis on growth as an objective suggests that the government of a devaluing country is likely to wish to neutralize any reduction in the incentive to invest. This might be accomplished by an appropriate increase in investment allowances or in investment tax credits. It also seems probable that the government of a devaluing country might wish to prevent the cost of home loans from rising along with other interest rates. This could be accomplished by a specific subsidy program to savings-and-loan associations.

In short, the domestic implications of the proposal are unlikely to be in themselves welcome, but they are by no means unmanageable.

Conclusion

The proposal discussed in this Essay is for a modification of the method whereby par changes are carried out. Its advantage is that it would eliminate the problem of speculative flows emerging whenever an exchange rate appeared to be getting slightly out of line. This would enable debate on the merits of a change in the peg to be carried out in a rational manner rather than by wild charges of unpatriotism if the subject is so much as whispered. It also offers the possibility, if this is desired, of using exchange-rate variation rather more freely as an adjustment mechanism. Since the changes in par would be gradual and predictable, the principal advantage of fixed exchange rates would be maintained. Their other supposed advantage, maintaining discipline, would be altered: it would be strengthened for gross indiscipline but weakened for mild inflation.

The fact that most of the discussion in this Essay has concerned downward rather than upward adjustments in par values no doubt reflects the country in and date at which it was written. In most cases,

however, the discussion is easily reversible for a country with a chronic surplus. For example, the possibility of allowing its peg to crawl upwards would give an unhappy surplus country the opportunity of reducing its accretions of unwanted reserves. It would be interesting to see how many surplus countries would take the opportunity of suspending the importation of inflation about which they complain so bitterly.

The recent international study group of economists who were responsible for *International Monetary Arrangements* devoted their report primarily to an elucidation of the judgments on which they differed and which thereby led them to different policy prescriptions. It seems appropriate to follow their exemplary precedent by compiling a list of the principal judgments that would determine one's view as to whether the proposal for a crawling peg deserves adoption.

(a) *Judgments of Fact*

1. Would speculators believe that countries had permanently abandoned all intention of adjusting par values other than through the crawling peg?
2. How large is the deflation/inflation that is needed to maintain par values permanently unchanged?
3. How large would be the disruption in international integration caused by a gradual change in the peg?
4. Could a 2 per cent per annum depreciation (appreciation) be relied upon to eliminate deficits (surpluses) reasonably quickly?
5. Could the effects on employment of a tight (easy) monetary policy be offset by an easy (tight) fiscal policy?
6. Could the effects of a tight-money/easy-fiscal-policy combination (or the reverse) on growth be offset by altering the mix of fiscal policy?

(b) *A Judgment Involving both Fact and Value*

7. Can the IMF and central bankers be relied upon to determine correctly when adjustment is called for and what constitute adequate steps to secure adjustment?

(c) *Judgments of Value*

8. How does one weigh one's estimate of 2 against 3?
9. To what extent should discipline be imposed on a country by external monetary authorities? Fully? Within limits? Not at all?
10. Should a country's creditors be subjected to partial expropriation because that country develops a payments imbalance?

11. How serious would be an increase (decrease) in the share of interest receipts in the national income?

If readers answer most of these questions in the same way as the author, they will be convinced of the merits of the proposal for a crawling peg.

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