more akin to the latter's purposes; to introduce a more meaningful standard of values that would eliminate or reduce the erosion of their capital resources; and to give these institutions temporary, limited, extraordinary access to international money so they can use their resources more effectively. In relation to these proposals, explicit mention should be made of the fact that the concept of one-world underlies them throughout. This was done not without an awareness that there are a number of forces that operate in the opposite direction. They include the reappearance of spheres of influence on a geographical basis, reflecting emerging sharing of political and military power; formations of institutionalized economic unions or groupings of different dimensions in different continents; stronger than usual resistance to outside influence in most countries, but especially in recently formed sovereign countries; affirmation of national social philosophies in real or imaginary opposition to those prevailing elsewhere. At the same time there are, however, centripetal forces based on rediscovered notions of interdependence, intensifications and improvements in communication systems, the gradual rising of cultural levels on a broad geographical basis, cultural exchanges, and others — forces that in the longer run should prevail. While the outcome of these opposing forces in the shorter run is not predictable, an attempt to move in the direction consistent with the one-world scheme appears to be a worthwhile undertaking.

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The Problem of Remonetizing Gold

The failure of the Committee of Twenty (C-20) to design an international monetary system in which the SDR would gradually assume the role of basic reserve asset has reinforced the US dollar in this position, which it acquired almost accidentally during the 1960s. The resulting dollar-reserve system (as one may term a system in which the dollar is the basic reserve asset but the other characteristic of a dollar standard, the widespread pegging of other currencies to the dollar, is not satisfied) is less offensive to the rest of the world than it would have been during the era of pegged exchange rates, since floating enables other countries to insulate themselves from at least some of the effects of US monetary policy. There nevertheless remain at least two reasons why some may remain unhappy with a dollar-reserve system: first, the belief that — despite floating — such a system bestows an undesirably large degree of economic power on the United States, and, second, the conviction that it confers financial benefits on the United States at the expense of other countries through providing her with seigniorage. The question naturally arises as to whether it might be more feasible to replace the dollar-reserve system by a gold-reserve system than it did to replace it by an SDR system. This is the question addressed in the present paper.

Section 1 outlines some of the salient features of the present monetary status of gold. Section 2 provides a brief summary of the characteristics which it is conventionally assumed a reserve asset should satisfy. Section 3 considers how a gold-reserve system would need to be designed in order to satisfy those requirements. Section 4 contains an assessment of the feasibility of introducing
such a system. The final section considers the implications of the analysis.

I. The Present Position of Gold

At present there is a stock of about 1 billion ounces of gold in official hands, which is worth some SDR 41 billion ($47 b.) at the official price of SDR 35 = 1 ounce and more than three times as much at the current market price. (The size of privately-held gold stocks is unknown but is certainly also substantial — possibly of a similar order of magnitude to official stocks.) Some 15% of official gold is currently owned by the IMF; however, the agreements reached by the IMF Interim Committee at Jamaica in January 1976 provided that one-sixth of this would be returned, or "restituted", to members in proportion to their gold subscriptions at the official price, while a further 25 million ounces would be sold on the market over a four-year period (with the profits being used to finance a Trust Fund to provide special assistance to some of the neediest developing countries).

Flows of gold are small in relation to these stocks. Annual production in the IMF world amounted to just over 30 million ounces in 1975, with sales from the socialist bloc providing an additional supply of about 5 million ounces and sales from Western official gold stocks a further 1.6 million ounces. Most of this supply is believed to have gone to satisfy the industrial demand for gold, although there probably remained some net addition to private gold hoards. The recent fluctuations in the industrial demand for gold suggest that this demand is quite price elastic. In contrast, the supply of gold is perversely elastic in the short run. The reason for this perverse short-run response is that a higher price which is expected to persist makes it economic to process lower-grade ore, and when the limited ore processing capacity provides an effective constraint there is an immediate fall in the output of refined gold. In the longer run, of course, processing capacity can be adjusted, so that a normal response can be expected.

Substantial price volatility is to be expected in any uncontrol-

accordance with the Jamaica agreements. It has not yet been revealed whether they plan to follow the French example, and adopt a market-related price, when the official price no longer exists. Since, however, the fundamental characteristic of a reserve asset is its ready availability to settle deficits, and since gold has been used for this purpose only rarely, reluctantly and with difficulty since August 1971, the practice of continuing to include gold in international reserves at any price must be considered anachronistic under present circumstances. Gold is, in fact, demonetized.

One legal obstacle to the monetary use of gold has been the proscription on central banks purchasing gold above the official price that derives from the original IMF Articles. This proscription is being abolished in the amendments to the Articles stemming from the Jamaica agreements and currently undergoing ratification. This ratification will free central banks to engage in gold transactions between one another at mutually-agreed prices. It will be necessary to consider below whether this is likely to restore gold to the status of a usable reserve asset and thus to justify its continued inclusion in reserves.

II. The Requirements of a Reserve Asset

The purpose of a reserve asset is to enable the country owning it to finance a payments deficit when the need arises. The prime requirement of a reserve asset is therefore that of liquidity. And the prime characteristic of a liquid asset is that it can always be realised quickly without depressing the market price against the seller. It was the combination of the thinness of the private gold market (which has been graphically illustrated by the effect of very modest official sales in depressing the price), the understandable reluctance of central banks to sell at an official price vastly below the market price, and the proscription on central banks buying above the official price, which resulted in this basic requirement of a reserve asset not being satisfied in the case of gold (except for very small countries) in recent years.

A secondary characteristic of a liquid asset is that the price at which it can be realised should be fixed; or, more generally, known in advance with substantial accuracy. Gold has not exhibited this characteristic since March 1968, and the forthcoming amendment of the IMF Articles will not change this position. This fact must lead to great doubt as to whether gold will again become a liquid asset even when the prohibition on central banks buying gold at a realistic price is removed. If the gold price rises after a central bank has sold gold, the officials responsible will be open to criticism for having foregone a capital gain. And if it falls after a central bank has bought gold, the officials involved will be open to criticism for having realised a capital loss. Risk-averse central bankers will therefore be reluctant to part with their gold except in extremis, and even then they will be unable to rely on finding a willing central-bank purchaser at the market price. Hence the conclusion that the Jamaica agreements are unlikely to restore gold to the position of a usable reserve asset.

An asset needs to be liquid if it is to qualify as a reserve asset at all. How well it performs in this role is generally evaluated under the headings of confidence, stabilisation and seigniorage.

The confidence problem consists in the danger that reserve holders will seek to substitute one reserve asset for another and so, by rational pursuit of national self-interest on the part of individual countries, turn the monetary system into a source of instability. The problem is endemic to any system with multiple reserve assets between which significant possibilities of substitution exist, unless there is scope for either the return on or the quantity of the various assets to adjust so as to preserve asset-market equilibrium.

The prime criterion of an efficient monetary system is its performance in contributing to stabilisation of the level of economic activity and either the level or trend of prices. This involves three partially distinct desiderata: the avoidance of those monetary shocks that have periodically generated hyperinflations and

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2 Some gold has been sold on the market by the central banks of small countries from time to time, but the only major monetary use of gold has been the 1974 German gold-collateral loan to Italy.

3 The following remarks summarise Section III.2 of my survey article (Williamson (1973)).
slumps, counter-cyclical operation, and provision for an appropriate long-run rate of monetary growth.

The seigniorage question involves the extent of the real resource costs absorbed in the production of reserves, and the distribution of any real income generated by an excess in the value of new reserve creation over the cost of reserve production. An efficient monetary system is one that minimizes the resource cost of providing money; a just system is one that distributes seigniorage equitably; and a viable system is one that does not impose such costs on any blocking coalition as to provoke it into exercising its veto.

III. The Design of a Gold-Reserve System

It was concluded above that risk aversion on the part of central bankers is likely to prevent the amendments currently undergoing ratification leading to a remonetization of gold. In order to accomplish this it would be necessary to enable prudent central bankers to transact in gold without inviting criticism. This requires either the assumption of an explicit obligation to buy gold at a defined price by parties who would collectively always be in a position to sustain such a commitment, whatever the pattern of payments imbalances, or stabilisation of the gold price. In fact both steps would be necessary in order to lead to a remotely satisfactory gold-reserve system. Stabilisation of the gold price would itself require countries with the necessary resources to commit themselves to supporting that price. And, while it is possible to conceive of a system in which countries would agree to buy any gold offered to them at a "defined price" equal (or related by formula) to a fluctuating market-determined price, the fact that international liquidity would vary substantially and capriciously in such a system would imply that it could not qualify as remotely satisfactory.

The first major conclusion is therefore that a gold-reserve system, like an SDR system but unlike the dollar-reserve system, could only come into existence through a deliberate international negotiation leading to a widely-agreed reform. The United States alone (and, a fortiori any other single country) no longer has the power (even if it had the motivation) to enforce a unilateral commitment to stabilise the price of gold. The agreed reform would need to include rules specifying the circumstances under which a country would be obligated to buy gold. The nature of these rules would depend on the intervention system adopted. Under a dollar intervention system, the rules would presumably specify that a country gaining reserves, and/or with currency reserves that were above a specified level, would be obliged to buy gold when asked to do so. Under a multurrency intervention system, there would seem to be a need for an internationally-agreed set of reference rates (in lieu of par values, which are a thing of the past) to specify which currency should be sold by a country intervening to defend its own currency, and it would be natural for the intervention-currency country to have the obligation of selling its own currency in exchange for gold.

The second major conclusion is that it would be necessary for the price of monetary gold to be stabilised. In a world of floating exchange rates, the only sensible concept of price stability for a reserve asset involves stability in terms of a basket — either of currencies, as the SDR is now defined, or of goods. Stability need not, however, imply constancy, and there are compelling reasons for regarding a constant gold price in terms of a basket of currencies as undesirable. The essential point is that governments could not be expected to deflate at whatever rate happened to be required to generate a secular growth in the real value of gold reserves adequate to satisfy reserve-accumulation objectives, so that from time to time pressures for a revaluation of gold would arise. The attempt to shift into gold when revaluation began to appear probable would be highly disruptive, while after a revaluation there would be a strong incentive to shift out and re-establish a gold-exchange reserve system; thus the confidence problem would lead to major variations in the quantity of reserves. These undesirable results could be avoided by allowing the price of gold to appreciate gradually, on crawling-peg principles. Technically, the reference rate proposal has been advanced by Ether and Bloomfield (1973) and Williams (1975). It envisages regular negotiation of a set of "reference rates" which would represent an official internationally-agreed view of appropriate exchange rates, but with countries only being obliged to avoid pushing their exchange rates away from the reference rates (rather than, as under a par value system, obliged to hold their rates close to the agreed rates).

4 The idea was first suggested by Wonnacott (1963).
this appreciation could be effected by regular, small, proportionate increases in the quantity of each currency in the basket used to value gold. If one wished to stabilise the price of gold in terms of internationally-traded goods, one would merely need to equate the proportionate rate of increase in the size of the basket to the rate at which the chosen index number of traded goods prices (expressed in a constant-size currency basket) was increasing. Other formulae could, however, be chosen, and it will be argued below that a somewhat different formula would be preferable.

It is convenient to consider next the implications of the seigniorage issue. One of the traditional objections to a gold-reserve system is its costliness: gold production absorbs real resources, and monetary gold is sterile rather than released for economic use. These costs not merely involve technical inefficiency, but also prevent gold reserves paying a competitive rate of interest and thereby create an incentive to supplement gold reserves with currency reserves, leading to a loss of control over liquidity and the confidence problems inherent in a dual gold-exchange system. The waste involved in producing new gold for monetary purposes could, however, be eliminated by the expedient of restricting monetary gold to that registered (with, say, the IMF) on the base date when the gold-reserve system was introduced. By having a once-for-all “coining” of gold, newly-produced gold could be prevented from entering the monetary circulation. There would remain an economic loss in failing to release the existing stock of monetary gold for economic use, but the response of Italy in 1976 to the price-depressing effects of even modest sales of official gold must raise doubts as to whether this can legitimately be considered a true opportunity cost.

The ease with which newly-produced and hoarded gold could be prevented from entering the official circuit, in contrast to the impossibility of preventing official gold being sold on the private market and the erosion in the liquidity of gold caused by a premium of the market price over the monetary price, indicate that it would be highly desirable to ensure that the monetary price remained permanently above the market price. A quintupling of the present official price (which is indicated by subsequent analysis) would bring the initial new official price comfortably above the present market price. And, since the driving force behind the 1971-74 speculative bubble in the gold market would be forever removed by the prohibition on additional gold entering the monetary circuit, one might feel reasonably confident that the official price would remain above the market price provided that the official price did not depreciate in real terms. Just to make sure, one might put the profits on the revaluation of IMF gold into a special account, where the gold could be sold on the private market if the market price threatened to approach the official price.

If it is assumed that at present the total stock of international liquidity (using the conventional SDR 35 an ounce valuation for gold) is roughly appropriate, then a major rise in the official price of gold would tend to cause excessive liquidity. Provided that the gold price did not rise by more than 5.4 times, however, excess liquidity could be prevented by a substitution operation. The IMF could open a substitution account to which countries would pay in (a) their gold revaluation profits, receiving a long-term claim in return, and (b) their foreign exchange holdings in excess of working balances, receiving gold in return. The substitution account would thus achieve a net claim on the former reserve centres and would have a net debt to the former gold holders, who would be repaid gradually as the former reserve centres amortized their debts. Reserves, apart from working balances, would consist entirely of gold. The reserves of each country would remain unchanged.

Unless the gold price were increased by the full 5.4 times, the substitution operation would leave foreign-exchange holdings in excess of working balances. Since a principal motivation for the whole exercise under consideration is, by hypothesis, to establish control over international liquidity, this would be unsatisfactory. It would seem preferable to choose a new gold price of SDR 189 = 1 ounce, which is what is needed to allow the substitution operation described to eliminate all reserve currency holdings other than working balances (on September 1976 figures).

In order to ensure that this gold-reserve system was not undermined by a new accumulation of foreign exchange reserves, the arithmetic is as follows. Total reserves (September 1976) are SDR 213 b. while national gold holdings are SDR 35.4 b. Allowing 10% of total reserves for working balances, gold reserves could multiply by 191.35/4 times without threatening the feasibility of the substitution operation described in the text.
obvious solution. One could arrange to create additional claims which would carry the same acceptance obligations and returns as gold and could be injected gradually into the system to supplement gold as a reserve asset. The initial distribution of these claims would need to be arranged on some basis other than gold holdings (since otherwise their creation would be equivalent to an increase in the return to gold holding), e.g. in relation to IMF quotas. They might be called, for want of a better term, "special drawing rights".

It has been argued in the present section that an economically-efficient gold-reserve system would need to be introduced by an explicit international agreement under which countries would agree to accept gold; that the price of monetary gold would need to be (a) initially roughly quintupled from the present level, (b) defined in terms of a basket of currencies, and (c) in future, crawl up at about 2% per annum in real terms; that the IMF would need to register present official gold holdings as "monetary" and prevent any new influx of gold into the system; that it would be necessary for the IMF to create a substitution account in order to prevent the initial gold revaluation causing excessive liquidity and in order to eliminate currency reserves (in excess of working balances) from the system; and, finally, that the IMF would need to retain the SDR mechanism in order to provide a future supplement to gold reserves. Abandonment of any one of these features would threaten the ability to achieve one or more of the objectives outlined in Section 2.

IV. The Viability of a Gold-Reserve System

A gold-reserve system would be a viable proposition only if one could assemble a winning coalition of countries which saw national advantage in subscribing to the wide-ranging agreement that would be necessary to introduce it. The national interests that countries take into account in judging this type of question certainly include the system's financial implications (the seignorage issue), and in addition some countries — in practice Japan and the countries of Continental Europe that have suffered grievously from imported inflation — appear to regard the establishment of effective and responsible control over the volume of international liquidity as also being an important interest. Without
implying that these are the only interests involved, it is instructive to examine whether they provide any basis for the construction of a winning coalition.

A minimum requirement of a winning coalition is that it comprise 80% of IMF quotas, since amendment of the IMF Articles requires an 80% vote. This gives a veto power to the United States; to the EEC acting collectively, but not to any of its individual members; and to the LDCs acting collectively, with or without OPEC — but not to OPEC alone.

The major obstacle to the construction of a winning coalition lies in the veto power of the United States. She has no interest in establishing international control of international liquidity, since the alternative is her own unilateral control. And she reaps seigniorage, albeit of modest proportions, from the dollar-reserve system, which she would gradually lose under the gold-reserve system as she amortized her debts to the substitution facility. Hence it would be necessary to introduce some additional element into the package in order to construct a bargain that would interest her.

So far as the Europeans (and Japanese) are concerned, there is an important divergence of interests between those who hold large

9 It is sometimes argued that the United States reaps no seigniorage from the present system, because dollar assets are supplied competitively and interest rates therefore rise to the point where all seigniorage is competed away. This argument would be correct only in a world of perfect capital mobility. In a world of imperfect capital mobility, the fact that certain holders of short-term assets (namely, foreign monetary authorities) hold dollars rather than something else implies that interest rates on dollar assets are lower than they would otherwise be, and it is this interest saving — for a given distribution of world wealth — which measures the seigniorage reaped by the United States. Measurement of a seigniorage gain involves, in principle, a comparison between two general equilibrium positions. One is the present situation, in which the United States is able to get help in financing the excess of its long-term foreign investments over its accumulated foreign surpluses by the official holdings of short-term assets of other monetary authorities. The other may be taken as a situation where all reserves are held in gold rather than in dollars and, in order to enable it to redeem its official dollar liabilities for gold, the United States is obliged to borrow on private capital markets a sum equal to its present official liabilities. It is only if the US were an atomic competitor on the world capital market that this change would not impose a cost on the United States. Since not even the most extreme monetarist models have type-cast the US as a negligibly small part of the world economy, one must conclude that the United States does indeed reap some seigniorage from the system.

quantities of gold — the countries of Continental Europe, except Scandinavia — and the others — Japan, the UK, and the Scandinavians. The former have both a seigniorage interest and a liquidity-control interest in a gold-reserve system, while the latter have only a liquidity-control interest and are largely indifferent on the seigniorage issue. (The UK is something of an exception: she has never displayed strong interest in the question of restraining liquidity creation, but on the other hand she might benefit from the creation of a substitution facility because of the opportunity of retiring gracefully and gradually from the unattractive role of providing a secondary reserve currency.) However, since neither group have anything to lose from adoption of a gold-reserve system, they could both be counted potential members of a pro-gold coalition.

Finally, the LDCs have not displayed much interest in the liquidity-control issue (which is probably quite rational), but neither would they suffer any seigniorage loss from replacement of the dollar-reserve system by a gold-reserve system. They would, however, suffer a seigniorage loss in comparison with an SDR system (especially if a link were adopted). Resentment at the failure to adopt this alternative replacement for the dollar-reserve system would seem likely to preclude their participation in a coalition to remonetize gold.

Only one of the three parties whose participation would be required to form a winning coalition could therefore be regarded as prospective participants. It might be asked whether this group of countries might be tempted to try and go it alone by agreeing to exchange gold at an agreed price between themselves. The answer is negative. Such an agreement would do nothing to establish control of international liquidity: hence only the high gold-holding group would have any incentive to subscribe to such an agreement. But this would imply that gold would be usable for the settlement of deficits only within a very restricted group of countries. Intra-group gold revaluation would, in fact, achieve nothing that cannot already be accomplished by expansion of the existing EEC medium-term credit facilities, except for replacing the participation of Denmark, Ireland and the UK by that of Austria, Portugal, Spain and Switzerland.

The basic problem with any attempt to construct a coalition to introduce a gold-reserve system is that there is no scope for a
trade-off between liquidity-control gains and seigniorage losses. The Continental Europeans (less Scandinavia) stand to gain, and the United States stands to lose, on both issues. There is no basis for a bargain.

V. Conclusions

It has been shown in Section 3 of this paper that it would be technically possible to design a gold-reserve system that met most of the traditional objections to relying on gold as the basic reserve asset — the confidence problems provoked by the growth of expectations of a rise in the gold price, the waste of resources in gold mining, the undermining of the system by the incentive to substitute interest-yielding currency reserves for gold when a price rise is not expected, the instability of reserve supply caused by gold flowing into and out of private hands, and the inflationary effects of gold revaluations. All that would be needed to introduce such a system would be an international monetary reform, of comparable scope to that which the C-20 failed to negotiate, agreed to by the United States in the teeth of her national interests and by the LDCs in the face of their resentment at the failure to enthron the SDR rather than gold. This resentment would be entirely natural: the necessary agreement would parallel that vainly sought by the C-20 on a whole range of issues, varying from substitution to the provision of a competitive yield on the primary reserve asset to limitations on the holding of non-primary reserve assets to criteria for determining the desirable rate of growth of international liquidity.

Perhaps the main message of this paper is that it is a delusion to imagine that gold could be remonetised by accident, or by the unilateral action of a small group of countries, or by waving a wand and commanding a return to Bretton Woods. Any return to a gold-reserve system would require explicit international agree-

ments with a content strikingly parallel to that considered for the SDR in the C-20. There would, in fact, be only two differences. First, for what it is worth, gold would be “backed” by a rare metal and not just by an agreement to accept SDRs when designated to do so and to service SDR allocations. The reason that this difference is not worth very much is that the monetary price of gold would not merely be somewhat above the market price, but that the market price would itself be vastly above the level that could be sustained if a breakdown in international monetary order led to a refusal to accept gold and hence attempts to dispose of monetary gold on the market. Second, the gold and SDR systems differ in their distributional implications: the former would give seigniorage to the European gold holders, while the latter would distribute it more widely. (This redistribution would be at the expense of the United States in both cases.)

If the Europeans were really anxious to replace the dollar-reserve system on the grounds that responsible international control of liquidity is desirable, it is just conceivable that they might succeed. The analysis of Section 4 demonstrates, however, that the worst possible strategy in pursuit of this goal is to push gold as a replacement for the dollar. If the Europeans want gains on the liquidity-control question, they will have to be prepared to buy them with a sacrifice on the seigniorage issue. An offer to formally demonetise gold, by ceasing to count it in international reserves, maintaining gradual disposal of official gold stocks on the market, and refraining from any support of the market price, would provide a potential concession to match the sacrifice of seigniorage that the United States would be asked to make in replacing the dollar-reserve system by an SDR system. If the West, including the United States, were seeking concessions to make to the LDCs in pursuit of the new international economic order, the redistribution of seigniorage involved in replacing both gold and the dollar by a linked SDR would not be negligible. The elements of a bargain might exist.

It seems likely, however, that the liquidity-control issue is not regarded as critical now that the pegged exchange rate system has been abandoned. If that is so, one can hardly look for concessions by the gold holders on the seigniorage issue. On the contrary, their policy is likely to be dictated by the attempt to maximise the present value of their gold portfolio. How they should pursue this
aim is a question in the theory of commodity speculation. The gold holders are rather in the position of a major shareholder who has made substantial paper profits in the process of acquiring his holding, by bidding the price up on an errant path. The question is whether they will ever be able to realise those profits.

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REFERENCES


On the Use, Misuse and Abuse of the Concept of the Pivot

In the recent literature on the appropriate structure for an international monetary system characterized by either adjustable-peg or gliding-peg exchange rates, a great deal of attention has been directed to the concept of the pivot. Implicit in this literature, and in the various propositions that have been advanced about the pivot, is the conclusion that the pivot point is a crucial concept which merits considerable attention in any discussions and negotiations aimed at establishing a new "permanent" international monetary system under which par values are observed. Unfortunately, a careful examination of the literature on this subject reveals several problems which cast doubt on the usefulness and/or policy importance of most of the propositions developed. In part, this seems to be the result of a semantic ambiguity. The various propositions developed about the pivot actually refer to slightly different concepts. In addition, however, some of the propositions themselves appear to be conceptually unsound, or to rest on assumptions not warranted by even a casual look at the conditions prevailing in the real world.

In an effort to place this literature in proper perspective, this paper critically reexamines the propositions that have been advanced about the pivot and identifies the weaknesses and strengths inherent in each. The organization of the paper is as follows. In Section I the various statements that have been made about the pivot are collected together, restated as formal theorems, and the

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1 See, for example, the contributions by Cooper (1971), Howe (1973), (1974), Howe and Moore (1971), and Williamson (1971), (1973).